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The

Official Year Book

of

New South Wales.

1921.



H. A. SMITH.

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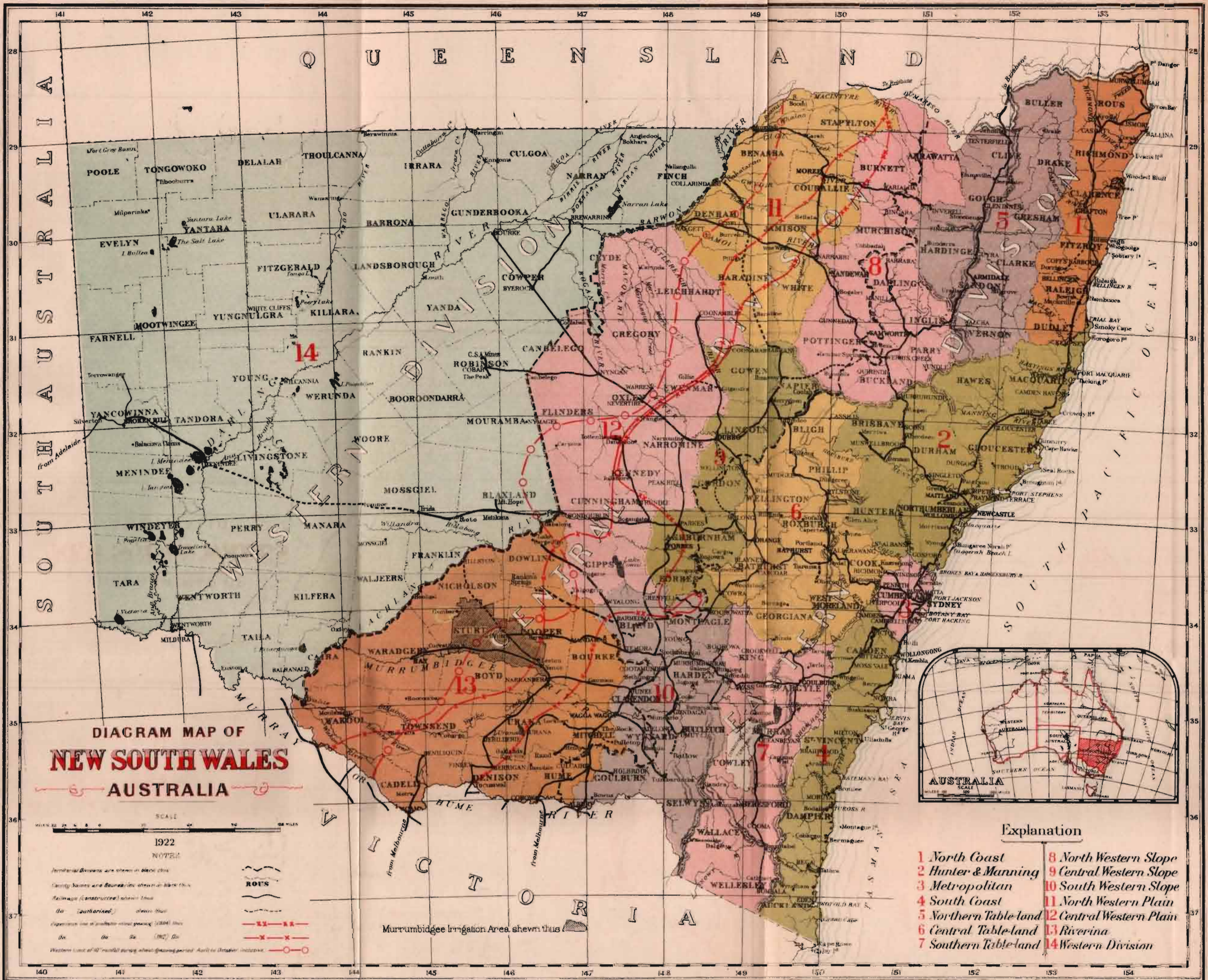
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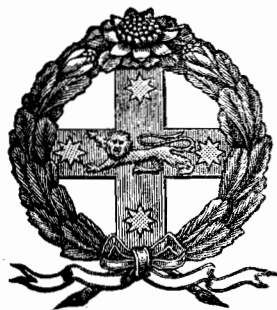








THE  
OFFICIAL YEAR BOOK  
OF  
NEW SOUTH WALES.  
1921.



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GOVERNMENT STATISTICIAN.

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PUBLISHED BY AUTHORITY OF THE GOVERNMENT OF  
NEW SOUTH WALES.

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1922.

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## PREFACE.

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THIS is the twenty-ninth issue of the Official Year Book, which from the first issue in 1886 to 1904 was known as the "Wealth and Progress of New South Wales."

The year 1921 was marked by a Census—from which more statistical information is available than for normal years—and by a definite break in the trend of economic development. It has been deemed advisable, therefore, to enlarge the scope of this survey of the State by adding, as additional parts, accounts of the Industrial History, Valuation of Wealth, Geological Formation, and Flora and Fauna of New South Wales. Owing to the need for economy these will not be repeated next year, and other important matter will not be re-printed.

In a work of this kind there is always difficulty in making it interesting to the two classes of persons for whose use it is intended, viz., those within the State, and those abroad, but it is believed the difficulty has been met.

The contents have been published already in nineteen parts, which were issued as they became available from the printer, in order to render them of immediate service. The information is in all cases the latest available at the time of publication.

A diagram map of New South Wales is published with the volume to show the railways, county and territorial divisions, and area of the State suitable for the profitable cultivation of wheat.

Every care has been taken to keep the work free from errors, but if any be noticed by readers it would be deemed a favour if their nature were indicated.

I have to express my thanks to the responsible officers of the various State and Commonwealth Departments, and to others who have kindly supplied all desired information, often at considerable trouble.

The "Statistical Register of New South Wales" is published annually from this Bureau. It contains in full detail the compiled statistics of the State, which will prove of service to those desirous of studying in greater detail the matters treated generally in this Year Book.

The rates per head of population throughout the volume have been revised in accordance with the amended estimates of population for the years 1911 to 1920, necessitated by the discovery at the Census of 1921 that the actual population was about 47,000 in excess of the estimate.

H. A. SMITH,  
Government Statistician.

Bureau of Statistics,  
Sydney, 31st August, 1922.



# CONTENTS.

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	PAGE.
Historical Sketch - - - - -	I
Constitution and Government - - - - -	25
Defence - - - - -	44
Geographical Sketch - - - - -	49
Climate - - - - -	68
Geological Formation - - - - -	75
Fauna - - - - -	79
Flora - - - - -	92
Population - - - - -	105
Vital Statistics - - - - -	124
Education - - - - -	159
Public Finance - - - - -	193
Law Courts - - - - -	227
Police and Prison Services - - - - -	243
Commerce - - - - -	253
Shipping - - - - -	265
Private Finance - - - - -	285
Manufacturing Industry - - - - -	321
Local Government - - - - -	357
Railways and Tramways - - - - -	403
Posts and Telegraphs - - - - -	425
Mining Industry - - - - -	431
Social Condition - - - - -	455
Food and Prices - - - - -	503
Employment and Production - - - - -	545
Industrial History of New South Wales - - - - -	623
Valuation of Wealth of New South Wales - - - - -	669
Agriculture - - - - -	707
Water Conservation and Irrigation - - - - -	758
Pastoral Industry - - - - -	767
Dairying Industry - - - - -	797
Forestry - - - - -	813
Fisheries - - - - -	819
Rural Settlement - - - - -	823
Land Legislation and Settlement - - - - -	840
Index - - - - -	871
Map of New South Wales - - - - -	<i>Frontispiece.</i>

## HISTORICAL SKETCH.

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**I**T is impossible to say who were the first discoverers of Australia, although French, Portuguese, Spanish, and Dutch navigators, in turn, laid claim to being the first to sight the great Southern Land, traditionally known as "Terra Australis."

The voyage of James Cook, in 1769-70, was undertaken primarily for the purpose of observing the transit of Venus, but the navigator was expressly commissioned to ascertain "whether the unexplored part of the Southern Hemisphere be only an immense mass of water, or contain another continent." The vessel fitted out for the voyage was a small craft of 320 tons, carrying twenty-two guns; she was built originally for the coal service, with a view rather to strength than to speed. Chosen by Cook himself, she was renamed the "Endeavour," in allusion to the great work which her commander was setting out to achieve. Mr. Charles Green was commissioned to conduct the astronomical observations, and Sir Joseph Banks and Dr. Solander were appointed botanists to the expedition. After successfully observing the transit from the island of Tahiti, or Otaheite, as Cook wrote it, the "Endeavour's" head was turned south for a time, and then north-west, beating about the Pacific in search of the eastern coast of the great continent whose western shores had been so long known to the Dutch. Circumnavigating and minutely surveying New Zealand, Cook then steered due west, in order to carry out the instructions given him.

After searching for nearly three weeks, Cook, on the 19th April, 1770, sighted the eastern coast of Australia. The first important point observed was a bare and sandy headland, to which he gave the name of Cape Howe, and then he passed and named Mount Dromedary, the Pigeon House, Point Upright, Cape St. George, and Red Point. Botany Bay was discovered on the 28th April, 1770, and as it appeared to offer a suitable anchorage, the "Endeavour" entered the bay and dropped anchor.

While in the bay Cook performed the ceremony of hoisting the Union Jack, first on the south shore, and then near the north head, thus taking formal possession of the territory for the British Crown.

After leaving Botany Bay, Cook sailed northward. He saw and named Port Jackson, but forbore to enter the finest natural harbour in Australia. Broken Bay and other inlets, and several headlands, were also seen and named, but the vessel did not come to an anchor until Moreton Bay was reached. Still sailing north and having completed the survey of the east coast, to which he gave the name of New South Wales, Cook sighted and named Cape York, the northernmost point of Australia, and took final possession of his discoveries from latitude 38° south, northward to latitude 10½° south, on a spot which he named Possession Island, thence returning to England by way of Torres Straits and the Indian Ocean.

The favourable reports brought to England by the "Endeavour" on her return, and the graphic account of the voyage published by Cook, together with the fact that Great Britain had just lost her North American colonies by their successful rebellion, turned all eyes to Australia, or New Holland, as it was then called. The difficulty experienced in disposing of criminals now that transportation to America had ceased, encouraged the Government of the day to found the colony of New South Wales. But, in addition, there were high motives of colonisation, for all concerned felt they were engaged



in founding a new home in the Southern Hemisphere for the British people, and the lofty visions which filled the minds of Viscount Sydney and Governor Phillip and of many other reflecting persons, found expression in the works of several contemporary writers.

Early in 1787 Viscount Sydney, Secretary of State for the Colonies, determined to plant a colony in New South Wales, and in May of that year the First Fleet was assembled. It consisted of the 20-gun frigate "Sirius," the armed tender "Supply," three storeships—the "Golden Grove," "Fishburn," and "Borradale," and six transports—the "Alexander," "Scarborough," "Lady Penrhyn," "Prince of Wales," "Friendship," and "Charlotte." The largest of these vessels measured only 450 tons, and the smallest 270 tons. On board the six transports were packed, according to the statement made by Collins in his history, no fewer than 564 men and 192 women, all prisoners who had been sentenced to expatriation. There were also carried 168 marines and 10 officers, commissioned and non-commissioned. These, with 5 medical men, a few mechanics, and 40 women—wives of marines—together with 13 children—the offspring of the convicts—made up the total number of persons despatched to found the colony. Captain Phillip, R.N., was placed in command of the expedition, and given a commission as Governor and Captain-General of New South Wales. The fleet sailed in May, 1787, and after calling at Rio Janeiro, arrived in Botany Bay in the beginning of January, 1788.

#### 1788-1806.

Governor Phillip was not long in discovering that Botany Bay was by no means an ideal spot for settlement. The harbour was shallow, and insufficiently protected from adverse winds; the rich soil and beautiful meadows mentioned by Cook and Banks could not be found, while there was a very scanty supply of fresh water. Phillip, with a small party, proceeded in a rowing boat to explore Port Jackson, and so impressed was he with the capabilities of this magnificent harbour, that he immediately determined on removing the settlement thither, choosing for its site the shores of a little inlet which he named Sydney Cove. The ships were therefore brought round as soon as possible, and on the memorable 26th January, 1788, formal possession was taken of Sydney Cove. The proclamation of the Colony and the reading of the Governor's Commission took place on the 7th February.

From the very outset the infant colony was beset by grave difficulties. When the work of clearing the woods and providing quarters and hospital accommodation was taken in hand, it was found that there were very few capable mechanics amongst either soldiers or prisoners. Many of the latter were lazy, and a large number were in poor health, while there was much quarrelling among the officers. After the soil had been got ready for tillage, it was discovered that no one had any practical acquaintance with farming. Some of the sheep and cattle died, others strayed away and were lost in the bush. Major Ross, the second in command, declared that, "It will be cheaper to feed the convicts on turtle and venison at the London Tavern than be at the expense of sending them here."

Despite all the worries, Governor Phillip did not lose heart, but struggled on bravely. It was his aim to make the new colony, as far as possible, independent of outside supplies, and when the land at Farm Cove proved unsuitable for agriculture, he lost no time in seeking elsewhere. Good land discovered where Parramatta now stands was promptly settled, and a branch settlement was formed at Norfolk Island, under Lieutenant King, in February, 1788.

It had been arranged before leaving England, that the stores of the Colony should be replenished every year. In accordance with this arrangement, the "Guardian," transport was despatched from England with supplies in August, 1789, but misfortune overtook her and she was wrecked near the Cape of Good Hope. To add to the distress occasioned in the colony by this mishap, a fresh batch of colonists arrived in the "Lady Juliana." The "Sirius" was hurriedly despatched to the Cape of Good Hope for supplies, and returned in May, 1789, but the stock of provisions could not be maintained, and famine threatened the colonists. In February, 1790, there was not four months' supply in the stores, even at half rations. The Governor therefore deemed it advisable to divide the settlement, and to send some of the inhabitants, with a portion of the supplies to Norfolk Island, on board the "Sirius" and "Supply." The "Sirius" was, unfortunately, wrecked near the island, and a large quantity of stores lost. The little company was reduced to desperate straits, subsisting for a time mainly on the sea-birds which nested on the island. Matters on the mainland were in no better case until June, 1790, when three store ships brought relief. Soon afterwards, in 1791, the "Second Fleet" consisting of one store-ship and ten transports containing prisoners arrived and, although there were subsequent periods of scarcity, the community was never again threatened with starvation.

At the close of the year 1792, Phillip resigned office and returned to England, his health having given way under the cares and anxieties of his office. During his term of administration the young colony had made substantial progress. Sydney had more than 1,000 inhabitants, and Norfolk Island about 900. At the Rosehill settlement there were 2,000 people, and rapid progress was made in agriculture. The valley of the Hawkesbury had been explored, and good land was found at various points along its course. The total population at the end of 1792 was approximately 5,000.

Until the arrival of a successor to Phillip, Major Grose and Captain Paterson, officers in charge of the military forces, administered the government of the colony. In 1795, Captain Hunter, who had commanded the "Sirius" before her loss, arrived from England as the second Governor, and with his reappearance affairs took a new turn. He brought out a number of free settlers, mostly agriculturists, and as some fine alluvial land had been discovered on the banks of the Hawkesbury, farming was successfully begun. In a short time more than 6,000 acres were under crops of wheat and maize. The attempts to introduce cattle had not been successful; but in 1796 a herd of sixty head was discovered at the "Cowpastures," near Camden. These were the descendants of cattle which had strayed from the settlement several years before; and though their quality was found to have deteriorated, they proved a very welcome addition to the live stock of the settlement. Progress now commenced in earnest, and in the next four years the population increased to 6,000; attempts were made to penetrate into the interior, although without success; the Hunter River and its coal-mines were discovered, and the mines were worked by a detachment of prisoners; Newcastle was founded; and the New South Wales Corps, a military body enlisted for service in the colony (the first detachments of which had arrived in 1790), was formed into an efficient garrison, and guard over the more refractory prisoners. Bass and Flinders minutely examined the coast to the south of Sydney, and the former discovered the strait which bears his name, thus proving Tasmania to be an island, and not the southern extremity of the continent, as previously supposed.

The existence of coal was first reported by some shipwrecked refugees who had made their way overland from Point Hicks to Sydney. At the locality where they discovered it, in the Illawarra district, the seam was so



difficult of access that its exploitation was at that time regarded as impossible. In the same year, however, Lieutenant Shortland, who had gone northwards in pursuit of some runaway convicts, discovered the Hunter, or Coal River, as it was originally named, and noted the deposits of coal near its mouth. The first recorded shipment of coal from the colony was in 1801, at a price of £2 5s. per chaldron.

The summer of 1798-9 was marked by one of the earliest recorded droughts. This was immediately succeeded in the Hawkesbury district by a disastrous flood, which swept away the homes of many of the settlers, and for a time paralysed all industry in that division. The live stock in the colony in 1792 had numbered only 182, but in 1800 there were 203 horses, 1,044 cattle, 6,124 sheep, and 2,182 goats. The first plough put into Australian soil was used on Macarthur's farm at Parramatta in 1795. The values of stock in those early days were very high. It was impossible to procure a horse for less than £100, and cows were sold at from £80 upwards.

The colonists laboured under severe disabilities through the lack of efficient ocean transport. The voyage to England nominally occupied more than four months, and a voyage by the "Albion" completed in three months fifteen days in 1799 was regarded as a wonderful feat.

The third Governor was Philip Gidley King, who arrived in Sydney with authority to relieve Governor Hunter, in April, 1800, but did not assume the administration till some months later.

He promptly drew the attention of the Home Authorities to the lack of a circulating medium in the colony, and 4 tons of copper coin to the value of 1d. each, and total value of £550, were sent out in 1800. Each coin was issued at the rate of 2d., and it was made a penal offence to export any quantity in excess of £5 worth of this coinage. This measure augmented the currency of the colony, which had hitherto depended on private resources and £1,000 worth of dollars sent out in 1792. The coins in circulation were of a rather mixed description, and in November, 1800, Governor King found it necessary to issue a general order fixing the denomination and rate of legal tender of the coins circulating in the colony. These were as follows:

	£	s.	d.			£	s.	d.
A Guinea ...	1	2	0	Rupce ...		0	2	6
Half Johanna ...	2	0	0	Dutch Guilder ...		0	2	0
Gold Mohur ...	1	17	6	English Shilling ...		0	1	8
Spanish Dollar ...	0	5	0	Copper Coin of 1 oz.		0	0	2
Johanna ...	4	0	0	"	½	0	0	1
Ducat ...	0	9	6	"	¼	0	0	0½
Pagoda ...	0	8	0					

During King's administration the first serious rising among the prison population took place. In 1804, a party of convicts, some 300 strong, was employed in road-making at Castle Hill, between Parramatta and Windsor. By some means they overpowered and disarmed their guards, and then marched in the direction of the Hawkesbury, where they counted on gaining support from the disaffected settlers. Major Johnston, the military commander, marched against them with a mere handful of soldiers, and after a struggle of about fifteen minutes' duration, the insurgents laid down their arms. The casualties amounted to 12 killed and 6 wounded, while 26 were taken prisoners, 8 of the latter being subsequently executed.

From the talent and energy which King had displayed in the formation of the branch settlement at Norfolk Island, it was thought that he would make a successful administrator, but the rum-trade interests proved so strong that, after a protracted contest with the officers of the New South Wales Corps, he was glad to resign in 1806.

Generally speaking, the colony made substantial progress during his term of office. The settlement had emerged from its state of dependence for food

on the mother country and some commercial enterprise in wool-growing and whaling began. By the year 1805 the important industry of wool-growing was established largely by the initiative of Captain John Macarthur. The first Spanish Merinos were brought to the colony in 1797 by Waterhouse and Kent, and Macarthur saw and exploited the great possibilities of the industry.

During King's administration, the first Australian newspaper—the *Sydney Gazette*,—was published in 1803.

The Hawkesbury district was again devastated by floods in 1806, when 36,000 acres were submerged, and about 23,000 bushels of wheat, 60,000 of maize, and 5,000 of barley were destroyed. Seven persons lost their lives, and it was stated that the river rose 70 feet over its usual level.

#### 1806-1821.

Governor King was succeeded in the administration by Captain Bligh. The new Governor had already given proofs of courage and resourcefulness by his celebrated voyage after the mutiny of the "Bounty," and had distinguished himself in the naval engagements at Camperdown and Copenhagen, and in connection with the mutiny at the Nore. He had been specially commissioned by the Home Government to abolish the rum traffic, which had assumed such proportions that spirits were being freely used as payment for labour and goods. The Governor proceeded to deal with the business in his customary arbitrary fashion, and, like his predecessor, incurred the odium of the officers of the New South Wales Corps, and the soldiers, aided by some of the civilians, did their utmost to render nugatory all Bligh's efforts to suppress the liquor traffic. Matters reached a climax with the arrest of Captain Macarthur. Macarthur's military friends procured his release, and this was followed by one of the most sensational episodes in the history of the colony, namely, the arrest and deposition of Governor Bligh by the soldiers under Major Johnston. The Governor was arrested in January, 1808, and kept in prison for twelve months, when he was allowed to assume command of the "Porpoise," on promising to proceed to England. He, however, put in at Tasmania and remained off the coast of the colony till May, 1810. For his share in these proceedings Major Johnston was tried in England in 1811, and cashiered from the service, while Macarthur was prohibited from returning to the colony for eight years.

Governor Macquarie took over the administration on the 1st January, 1810. Prior to leaving England he had been instructed to re-instate Bligh for a period of twenty-four hours, and to rescind the orders of the interim military despotism. The first of these tasks could not be carried out, and the Governor exercised his discretion with regard to the second.

Macquarie at once entered on a vigorous public works policy. New roads and bridges were built and extensive repairs effected to those already existing, while numerous public buildings were erected. The flocks and herds of the colony at this period comprised 65,000 sheep, 21,000 cattle, and nearly 2,000 horses, and so rapidly were they increasing that an outlet was becoming imperatively necessary. Attention was therefore directed towards the possibility of finding a way over the Blue Mountains into the country beyond, and this was successfully accomplished in 1813 by Messrs. Wentworth, Lawson, and Blaxland. Prior to this several attempts had been made by other explorers such as Bass, Tench, Wilson, Caley, and Barrallier. The Governor lost no time in sending a surveyor to report on the practicableness of making a road over the ranges, and the report being favourable, the work of construction was pushed forward so vigorously that, by 1815, a stream of settlement was passing westwards to the rich Bathurst Plains.

The explorations of Oxley and Hume, between 1817 and 1819, added considerably to the knowledge of the country, and the known area of the colony was increased some twenty times by their efforts.

For a long time the Lachlan and the Macquarie Rivers mystified the early explorers. Oxley followed up the Lachlan in 1817 for more than 400 miles until he found further progress blocked by a swamp. He then struck off across country till he reached the Macquarie, passing through the rich Wellington valley on his way. Next year he went down the Macquarie, until he again found his progress stopped by this supposed inland sea. From this point he struck away towards the coast, crossing the fertile Liverpool Plains and discovering the Hastings and Manning Rivers before his return to Sydney. Meanwhile, Hamilton Hume had forced a passage through the rugged country to the south-west, and discovered the valuable agricultural and pastoral lands round Lake Bathurst and Lake George, and by the year 1819 had pushed as far down as the Murrumbidgee.

Macquarie's administration has been the subject of varied criticism. Under his public works policy he erected 250 public buildings, and built numerous roads and bridges, thus affording labour for convict and settler, and developing the resources of the colony. The name of George Street was applied to Sydney's principal thoroughfare by a General Order of August, 1810, while many improvements were made in buildings and means of communication throughout the metropolitan area. By some people, however, he has been accused of simply lavishing the Imperial funds for his own self-glorification. His treatment of the "emancipists," as those convicts were called who had served their sentences, also roused a storm of hostile criticism from the "pure merinos," as the free settlers were called. Macquarie held that when a convict had served his sentence he should be regarded as a free settler, and admitted to the social privileges befitting his station. In fact he was so extreme in this regard that he looked on the free settler almost as an interloper. He quarrelled with Mr. Bent, the first judge of the Supreme Court, because he would not hear the pleading of an emancipated barrister, and, on the Governor's advice, Bent was recalled by Earl Bathurst. The Home Government sent out Mr. Bigge with a Commission to inquire into the state of the colony, and this officer reported against Macquarie's extravagant expenditure and his treatment of the emancipists, but gave him credit in other directions. Whatever view may be taken on some matters, there is no doubt that under Macquarie's rule the colony made substantial progress, and his departure was viewed with regret by the great bulk of the inhabitants.

#### 1821-1838.

The new Governor, Sir Thomas Brisbane, entered on his duties on the 1st December, 1821.

The recent important discoveries of good lands had been the means of attracting a considerable number of free settlers, many of whom possessed a fair amount of capital, and their advent was regarded with great satisfaction by the Government. This flow of immigration lasted throughout Governor Brisbane's term of administration.

An event of great importance in Colonial history occurred in 1824, when a Legislative Council, consisting of "five principal officers," was created. This body, with its restricted powers, inaugurated civil government and formed the nucleus of the present more extensive system of self-government. Trial by jury was instituted in 1824, the first Civil jury being empanelled on the 1st November in that year. The censorship of the Press was removed, and this liberty resulted in the issue of another newspaper, the

*Australian*, edited by W. C. Wentworth. The old *Sydney Gazette*, first published in 1803, and formerly the only newspaper in the colony, was under complete Government control.

During Governor Brisbane's period of office the exploration of the interior was pushed forward vigorously. In 1823 Captains Stirling and Currie, in the course of an expedition to the southward, discovered the fertile district which they called the Brisbane Downs, but which is now known as the Monaro Plains. Next year Hovell and Hume penetrated the region between Lake George and the shores of Bass Straits, and discovered the Hume, Ovens, and Goulburn Rivers, reaching the north-eastern arm of Port Phillip on the 16th December, 1824. About the same time Allan Cunningham, a botanical collector for the Royal Gardens at Kew, discovered the Cudjegong River, about 50 miles northward of Bathurst, and the rich pastoral land in its basin was soon occupied by prosperous settlers. Cunningham also discovered the Pandora Pass, leading from the Upper Hunter into the fertile district of Liverpool Plains. In 1823, Oxley discovered the Brisbane River, which flows into Moreton Bay, and is one of the largest rivers on the east coast of Australia. A branch penal settlement was formed on the banks of the river in the following year.

Governor Brisbane was succeeded in the administration by Governor Darling, who assumed office on the 19th December, 1825.

About this time the Australian Agricultural Company, which had been incorporated with a capital of a million sterling, commenced operations in the Hunter River district, where they had been granted a million acres of land. The extensive purchases of sheep and cattle by the agents of the Company caused a boom in prices which, in the ensuing dry years, led to the ruin of those who had overstocked.

Darling tried to rule the colony with a rod of iron, and it was not long before he found himself involved in serious difficulties. Some of his harsher measures he foolishly attempted to justify in the *Sydney Gazette*, while he was most bitterly assailed in the columns of the rival papers. He then tried to interfere with the liberty of the Press by proposing legislation aimed at regulating the contents of the papers, but in this he was unsuccessful, and the struggle had not ended when he left in 1831.

Sturt's famous journey to the south-west interior was commenced in 1829. Reaching the Murrumbidgee, he followed its course until the usual swamps were met with, when the expedition took to the boats, and passing the Lachlan mouth entered the Murray, which Sturt followed down to the sea. The return journey against the swift current was accomplished only after great privation, and when the intrepid leader reached Sydney he was blind, and did not recover his sight for some considerable time. In 1827, Allan Cunningham, in the course of an exploration to the northward, crossed the Gwydir and Dumaresq, and discovered the splendid pastoral country in the Moreton Bay district known as the Darling Downs.

Governor Bourke arrived in the colony on the 2nd December, 1831, and during the six years in which he administered the Government he gained the respect and affection of all classes of the community. One of his first acts was to abolish the Government patronage of the *Sydney Gazette*, and so to terminate the unseemly disputes which had harassed the administration of his predecessor. He lost no time in procuring more humane conditions for the convicts, and ensured greater fairness in their assignment to the settlers. Religious equality was secured in the colony by the General Church Act of 1836, which continued in force till the year 1862. Immigrants began to arrive in large numbers, under a policy of assisted immigration which was then initiated. The first vote in aid of immigration was made by the Legislative Council, at Bourke's suggestion, and the British



Government doubled the amount given by the colony. Under that system the first batches of immigrants to arrive were fifty young women from an orphan school in Cork, and fifty-nine mechanics from Scotland, whom the Rev. Dr. Lang introduced for the purpose of building the Australian College. The first steps also were taken in the path of constitutional reform, but the movement did not reach its full fruition until after the arrival of Gipps.

The explorations of Sir Thomas Mitchell, undertaken during Governor Bourke's administration, added greatly to the knowledge of the interior. In 1835 Mitchell proceeded westward from Boree, near Bathurst, along the Bogan to the Darling, which he followed for 300 miles. In the following year he traced the remaining 130 miles of the Darling's course, visited the head waters of the Murray and the Murrumbidgee, and then struck off southward through the beautiful district which he named Australia Felix, and which now forms part of the State of Victoria.

#### 1838-1851.

Sir George Gipps, the ninth Governor of New South Wales, assumed office on the 24th February, 1838.

With the opening up of the splendid country round Port Phillip, a strong tide of immigration had set in towards the colony. A large number of those who came out were possessed of capital, and in the rush for land, prices rose considerably. After a time they passed the margin of safety, and then the inevitable crash came, involving the ruin of the Bank of Australia and various other financial institutions. This happened in 1843; and in 1844 the Governor, in order to replenish the depleted coffers of the State, propounded a scheme under which the squatters were to be forced to purchase a certain quantity of land every year at the minimum price—a course of action which resulted in a storm of discontent.

In 1842 a Constitution Act was passed providing for a Legislative Council of thirty-six members, six of whom were Government officers, six Crown nominees, and the rest elected by the people—eighteen in New South Wales, and six in Port Phillip. Civil government thus developed into representative government.

An event of great moment under the Gipps administration was the abolition of transportation to New South Wales, which was effected under an Order-in-Council passed in 1840, Tasmania and Norfolk Island being made the only convict settlements in Australia.

Sir George Gipps left the colony on the 11th July, 1846, and was succeeded on the 2nd August by Sir Charles Fitzroy, who administered the affairs of New South Wales until the 20th January, 1855.

For some years the inhabitants in the Port Phillip district had been agitating for separation from the parent settlement. The Home Authorities therefore appointed a Commission to devise a scheme for conferring self-government on the Australian colonies, and this body recommended that Port Phillip should be separated from the older colony, and be called Victoria. The necessary legislation to give effect to this proposal was passed by the New South Wales Government in the year 1851.

#### 1851-1859.

The discovery of gold in 1851, by Edward Hargraves, exercised a momentous effect on the destinies of the colony, and, in fact, "precipitated Australia into nationhood." For some years prior to 1851 there were grounds for believing that deposits of precious metal would eventually be found. Strzelecki had discovered traces of gold near Hartley as early as 1839, in the time of Governor Gipps; but the latter, fearful of the effect that such

news might have on the convicts, persuaded him to refrain from publicly mentioning it. In 1841 the Rev. W. B. Clarke found grains of alluvial gold near Bathurst; while three years later Sir Roderick Murchison, the eminent English scientist, stated his belief that the Dividing Range would be found as rich in gold as the Urals of Europe. News of the Californian discoveries reached New South Wales in 1849, and amongst those who joined in the rush to that country from Australia was Edward Hargraves. While at the diggings in California, he was struck by the similarity between the country round him and that of a particular locality in New South Wales, and so obsessed did his mind become with this idea that he resolved to return home and prospect at the spot. In February, 1851, he proceeded to the junction of the Lewis Ponds and Summer Hill Creeks, where he at once struck alluvial gold. Hargraves' discovery was soon followed by finds in various other parts of the Colony, and "rushes" set in to the different fields. The effect of the gold discoveries on the economic condition of the colony was at first disastrous. Professional men, tradesmen, agriculturists, and labourers of all classes left their usual avocations and flocked to the diggings. Ship after ship arrived in Sydney harbour laden with eager gold-seekers, and in many cases even the crews deserted and joined in the race for wealth. Prices rose prodigiously, while production was almost at a standstill. The crowds of lawless characters who gathered at the various diggings caused endless trouble to the police, while the unsuccessful and penniless prospectors who clustered in the metropolis were also a source of much anxiety. Later on, when the gold fever had abated somewhat, many of those who had failed to reap a sudden fortune found that wealth could be surely, if more slowly, acquired by following their ordinary employments, and it was in this spirit that the foundations of sound progress were laid.

Nothing since the introduction of wool-growing had tended so much to develop the resources of the colony, and to make so widely known the great advantages which Australia offers to the overcrowded populations of the Old World, as the discovery of gold in 1851. Since that era the country's progress has been by leaps and bounds, and Australia, which was before regarded merely as a far-off dependency of Great Britain, now takes a place amongst the nations of the world, and is in a fair way of realising the prophetic visions of future greatness which inspired its founders.

Sir Charles Fitzroy was succeeded in the Governorship by Sir William Denison on the 20th January, 1855. Towards the close of this year the Royal assent to the new Constitution was received, and the first Parliament under the new order met on the 22nd May, 1856. This Act, which was the outcome of a considerable agitation conducted during the previous decade, provided a permanent settlement of the ever-recurrent disputes between the Governor and his Council by establishing a complete system of representative and responsible Government. This system, save for the modifications consequent on the federation of the colonies, exists practically unchanged at the present day.

The following year was one of the most disastrous in the history of the Colony. Torrential rains had been followed in many districts by devastating floods, occasioning great loss of life and damage to property, the Hunter and Hawkesbury districts especially suffering. In addition, the "Dunbar" was wrecked at the Gap, near Sydney Heads, and out of 120 persons on board—many of them colonists returning from Europe—only one man was saved. Shortly after this, twenty-one lives were lost in the wreck of the "Catherine Adamson," also in the immediate vicinity of the Heads. To guard against a repetition of similar calamities, the coastal lighting was improved, and the lighthouse erected at South Head is amongst the finest in the world.

The Moreton Bay district was separated from New South Wales in 1859, and was constituted a distinct colony under the name of Queensland.

#### 1859-1872.

Sir William Denison left New South Wales on the 22nd January, 1861, and was succeeded by Sir John Young, who arrived on the 22nd March.

At the very outset of his administration the new Governor was called upon to deal with a constitutional crisis. Mr. Robertson had introduced his Land Bills for the second time, embodying the principle of free selection, which was very distasteful to the squatting interests in the Upper House. Accepted by the Lower House, the measures were rejected by the Legislative Council, and the Governor thereupon granted a dissolution of Parliament, and a general election was held. At this election the policy of the Government was emphatically endorsed and, the Council still proving obdurate, sufficient new members were created to swamp the opposition and carry through the proposed legislation. When the new Councillors appeared in the Chamber the old members left in a body, and as the newcomers could not be sworn in, the Council ceased to exist. A fresh body of Councillors was therefore appointed, and the Crown Lands Alienation Bill and Crown Lands Occupation Bill became law in 1861.

Sir John Young's period of administration terminated on the 24th December, 1867, and the new Governor, the Earl of Belmore, assumed office on the 8th January, 1868.

As the year 1870 was the anniversary of the discovery of Australia by Captain Cook, it was resolved to mark the occasion by holding an exhibition illustrative of colonial progress. Victoria, Queensland, South Australia, and Tasmania contributed exhibits, and the exhibition, which was held in an elaborate building in Prince Alfred Park, Sydney, was a pronounced success.

#### 1872-1893.

The Earl of Belmore was succeeded in the administration by Sir Hercules Robinson, who assumed office on the 3rd June, 1872.

In 1873 the colony lost the services of one of its most distinguished politicians, in the person of Mr. W. C. Wentworth, whose death took place on the 7th May, both Houses of Parliament adjourning as a mark of respect to the deceased statesman.

It was about this time that a vigorous public works policy was again initiated, and for fifteen years the Government continued to expend large sums of money in the construction of works and on services which, in many instances, were far in advance of requirements.

In 1874 an important constitutional enactment, the "Triennial Parliaments Act," was placed upon the statute-book. By this measure the duration of Parliament was reduced from five to three years.

Sir Hercules Robinson remained in office till the 19th March, 1879, the new Governor, Lord Loftus, taking over the administration on the 4th August.

During the Loftus Administration some most important measures were passed into law. The Public Instruction Act remodelled the education system. Under the previous Act of 1866 the schools subsidised by the Government had been placed under the control of a Council of Education, and aid was granted to denominational schools. The Act of 1880 dissolved the Council, and placed public education under the control of a Minister of the Crown. Provision was made for compulsory education, and for the training of teachers; State aid to denominational schools was abolished, and the Act decreed that all State education must be non-sectarian.

The first revision of the electoral districts was made under the Electoral

Act of 1880. The number of electorates was increased to 72 with 108 members. Provision was also made for additional representation of any electorate in accordance with increase of population.

A very successful International Exhibition was opened in the early part of the Loftus administration, and had the effect of attracting considerable outside attention to the varied products of the colony. The Garden Palace, which housed the exhibits, was unfortunately destroyed by fire in the year 1882, and many valuable documents were destroyed.

The rich silver lodes in the Broken Hill district were discovered in 1883, and the Broken Hill Proprietary commenced operations two years later. For many years the field has ranked amongst the foremost silver and lead producing areas of the world.

An event which afforded striking testimony of the loyal attachment of the colonies to the homeland was the despatch in 1885 of a contingent of troops to assist the British arms in the Soudan. The detachment left Sydney in the "Iberia" and "Australasian" on the 3rd March, amidst intense enthusiasm. Although the number of men sent was comparatively small, and took little part in actual hostilities, the incident undoubtedly was the means of arousing a new estimate of the value of the Colonial Empire.

Since the riots of 1861, which had resulted from the attempts of the gold-miners to evict the Chinese from Lambing Flat, public attention had been directed to the large influx of Chinese, and it was felt that the time had arrived when something should be done to stop indiscriminate immigration of this character to the colony. This was, for the time being, effected by the Chinese Restriction Act of Sir Henry Parkes, which received the Royal assent on the 6th December, 1881. Under the provisions of the Act shipmasters were forbidden to carry more than a limited number of Chinese passengers to the ports of the State, while each of these immigrants had to pay a tax of £10 before being allowed to land. Heavy penalties were provided for any infraction of the law. Later on this law was supplemented by other legislation of a still more drastic character.

Lord Loftus' term of office expired on the 9th November, 1885, and his successor, Lord Carrington, took over the administration on the 12th December following.

Despite the Chinese Restriction Act of 1881, large numbers of these aliens continued to arrive in the colony, the number who came in during 1887 being considerably over 4,000. Public indignation was so aroused by fears of a similar invasion during succeeding years that the Premier, in 1888, actually took the illegal step of forbidding the captains of two vessels to land contingents of Chinese immigrants. The owners of the vessels, however, took the matter into court, and Sir Henry Parkes was forced to give way; but on the 11th July, 1888, a further Chinese Restriction Act was passed which prohibited the carrying of more than one Chinese immigrant to every 300 tons of the vessel's burthen, and imposed a poll tax of £100. In consequence of this repressive legislation Chinese immigration fell away considerably, only seven entering the colony in 1889.

Prior to 1887 coal-mining in New South Wales had been singularly free from disasters of any magnitude, such as occasionally occur in other parts of the world, but early in that year the Colony was stunned by the news of a dreadful calamity at the Bulli Colliery, in the Illawarra district, when eighty-three miners lost their lives through an explosion of gas in the workings of the mine. Relief Committees were immediately formed, and in a short space of time large sums of money were collected to aid the widows and orphans of the unfortunate victims. As the result of an inquiry instituted by Parliament into the causes of the accident, steps were taken with a view to minimising the possibility of its recurrence.

The period from 1885 to 1895 was marked by considerable disturbance in economic conditions. The vigorous public works policy previously alluded to, ceased at about the beginning of the epoch, and, in consequence, a large number of unemployed were thrown on the labour market, and wages in most trades underwent a serious decline. In addition, the numerous strikes which characterised the period had an unhappy effect on trade and wages. Much distress was caused in the southern district in 1886-7 by a strike which involved the cessation of labour at several of the southern collieries. This was followed in 1888 by a strike of 6,000 coal-miners in the northern district. In 1890 a strike at Broken Hill led to the closing down of the silver-mines. Following on the pronouncement of the Intercolonial Labour Conference, over 40,000 men ceased work, and being joined by the draymen in the metropolis, for a time paralysed the wool trade, while the shearers' strike in the same year involved some 20,000 workers. In 1892 the Broken Hill silver-mines were laid idle for four months through a strike of the local miners. In addition to these disastrous events, the closing years of Lord Carrington's administration were marked by devastating bush fires in portions of the colony, followed by destructive floods, the northern coastal districts especially suffering in 1890 from inundations.

Lord Carrington's term of office lasted till the 1st November, 1890, and on the 15th January, 1891, he was succeeded by the Earl of Jersey.

Early in March, 1891, a Federal Convention, consisting of delegates appointed by the various Australasian Parliaments, met in Sydney and drew up a draft Constitution Bill. Although this measure at the time did not arouse popular enthusiasm in the States, it nevertheless formed the basis upon which the present Constitution was constructed.

An outcome of the industrial disturbances in the years immediately preceding 1891 was the formation of a definite "Labour Party" in politics, and from this time forward the influence of labour has had a marked effect on the trend of legislation. Successful efforts to enter Parliament had, prior to 1891, been made by professed labour candidates, but it was in this year that the first concerted action was taken by duly accredited representatives of an organised political labour party. At the general elections in June the nominees of the party entered the political arena, pledged to the support of a platform of sixteen clauses, and secured eighteen out of fifty-two seats in the metropolitan division, also polling heavily in several others. When the time came to count heads in the ensuing Parliament of one hundred and twenty-five members it was found that there were thirty-five labour members, while more than a dozen others were prepared to subscribe to their platform. Since 1891 the party has experienced many vicissitudes, while its platform has, from time to time, been remodelled, but it has been instrumental in securing the passage of a considerable amount of industrial legislation.

#### 1893-1901.

The Earl of Jersey's governorship terminated on the 1st March, 1893, and his successor, Sir Robert Duff, assumed office on the 29th May following. It was about this period that the series of financial disasters occurred, which are generally alluded to as the Banking Crisis of 1893. The approach of this crisis had been heralded by several signs. As early as 1891 several land companies and building societies, whose business had been conducted on an unsound basis, failed to meet their obligations. In 1892, in consequence of a groundless rumour, there was a temporary run on the Savings Bank of New South Wales. In March, 1892, a fresh impetus was given to the feelings of distrust and alarm by the failure of the Mercantile Bank of Australia at Melbourne. During the course of the following month the

Bank of South Australia and the New Oriental Bank failed to meet the demands made upon them. Feelings of uneasiness increased, and all efforts to stem the gathering tide of disaster proved unavailing.

On the 29th January, 1893, the Federal Bank of Australia suspended payment, followed by the Commercial Bank of Australia on the 5th April, while by the middle of May no less than thirteen out of the twenty-five trading banks were forced to close their doors. The securities of a large number of these institutions consisted of real estate, and could not, therefore, be converted into cash at short notice, while several of them possessed large holdings of Government stock and debentures which were readily saleable only in London. The English banks hastened to the rescue, and a shipment of £900,000 in gold was despatched to the colonies from London. Valuable aid was also rendered by the Dibbs Government in New South Wales proclaiming bank-notes to be legal tender and guaranteeing their payment for a period of about seven months, after which State assistance was no longer required. Although public confidence received a rude shock by these untoward experiences, there can be no doubt that the crisis of 1893 was in some measure a blessing in disguise, for it led to a more rigid scrutiny of their securities by both the banks and the public, and it had the effect of putting an end to the bogus institutions which deluded the public by paying interest out of capital, and by various other nefarious devices.

Fresh labour troubles occurred in 1893, culminating about the middle of the year in a general strike of the seamen engaged on the intercolonial steamers. Trade was for a time paralysed, but the employers were assisted by numerous bands of volunteer workers, and in the end defeated the strikers. The year 1894 saw a recrudescence of industrial disturbances, and a strike of shearers in New South Wales and Queensland for a time disorganised the wool trade. Efforts were made to prevent a recurrence of these unfortunate disputes by the formation of a Board of Conciliation and Arbitration, but the scheme was unsuccessful, and it was not until eight years later that practical legislation was passed to deal with the evil.

In July, 1894, the Ministry of Sir George Dibbs gave place to an administration presided over by Mr. G. H. Reid. This Government lost no time in introducing new methods of taxation in the form of a Customs Duties Bill and a Land and Income Tax Bill. The Upper House, however, rejected these measures, and the Premier thereupon appealed to the country. The general elections in July confirmed his policy, and in the subsequent Parliament the Bills were again introduced and a second time rejected by the Council. Recourse was, therefore, had to a conference between the two Houses to settle some of the matters in dispute, and the measures shortly afterwards became law. The Government was also successful in passing a Crown Lands Act, introducing the principle of homestead and settlement leases, while a great boon was conferred on the employees in factories and shops by the Factories and Shops Act of 1896. Amongst other important legislation passed during this period was the Public Service Act of 1895, which removed the appointment and promotion of public servants from the control of the political heads and placed them in the hands of three independent Commissioners, and the Federal Enabling Act of 1896, providing for the representation of New South Wales at the Federal Convention.

Sir Robert Duff died in office on the 15th March, 1895, and on the 21st November Viscount Hampden assumed the administration, which he held until the 6th March, 1899. His successor, Earl Beauchamp, took over the duties on the 18th May, 1899.

The colony lost one of its foremost statesmen in 1896 by the death of Sir Henry Parkes, who had been intimately connected with the destinies



of New South Wales from the initiation of Responsible Government, and had been instrumental in placing some of its best legislation on the statute-book. The deceased statesman had also been one of the chief advocates of Australian Federation.

In its completed form the Commonwealth Constitution Bill of 1898, although essentially grounded on the Bill of 1891, nevertheless contained some very important alterations and additions; while it was accepted in Victoria, Tasmania, and South Australia, the result of a referendum on the 3rd June, 1898, showed that a sufficient majority had not been obtained to ensure its acceptance in the parent State. The election in 1898, at which the party led by Mr. G. H. Reid was returned to power, had been contested mainly on the Federal issue, but it was recognised that some drastic changes would have to be made in the Federal Constitution before it would be welcomed in New South Wales. The Government thereupon decided to send Mr. Reid to a conference with representatives of the other States, and commissioned him to move a series of resolutions expressing its wishes with regard to the Bill. This Conference met in Melbourne in January, 1899, and after a considerable amount of discussion, both with the Legislature of New South Wales and the representatives of the other States, the Bill was sufficiently amended to please the majority of those interested in its fate, and at a referendum in June, 1899, it was accepted in New South Wales, and shortly afterwards in all the other States, excepting Western Australia. A referendum was not taken in the last-mentioned State until the 31st July, 1900; but the Bill was passed there by the substantial majority of 25,109 votes.

In response to a call for troops for service in South Africa, three contingents were despatched by the Government, another corps was provided for almost entirely by voluntary subscriptions of citizens, while a body of mounted troops known as the Imperial Bushmen's Contingent was raised by the Imperial authorities. Earl Beauchamp resigned office in November, 1900, and the Government was administered by the Lieutenant-Governor, Sir Frederick Darley, until the end of May, 1902, when Sir H. H. Rawson arrived.

The Commonwealth Constitution Bill was received with considerable approval by the Imperial Government and passed with certain amendments, the most important of which referred to appeals to the Privy Council. After consultation with representatives of the Australian States who were sent to England for the purpose, all difficulties were eventually smoothed away, and the Bill received the Royal Assent on the 9th July, 1900. Lord Hopetoun, who was appointed first Governor-General, arrived in Sydney on the 15th December, and the formal inauguration of the new Commonwealth took place on the 1st January, 1901. The ceremony of swearing-in the first Federal Ministry was conducted in a pavilion erected for the purpose in the Centennial Park, at Sydney, and the festivities in honour of the birth of a Federated Australia lasted for several days, considerable éclat being lent to the proceedings by the presence of picked detachments of troops from Great Britain, India, and the various provinces of Australasia. In connection with the history of the Federation, a melancholy interest attaches to the death of Queen Victoria, which took place on the 22nd January, 1901, from the fact that one of her last public acts was to sign the warrant establishing the Commonwealth.

#### 1901-1910.

The effect of the Commonwealth of Australia Constitution Act, by virtue of which the Commonwealth was established, was to vest in the Commonwealth extensive powers defined mainly in section 51. But outside these limits there was no interference with the constitution of the

States. Broadly speaking, the powers delegated to the Federal Legislature were of general application, and not to be applied to any one State. Usually, the powers of both State and Federal Legislatures were concurrent, except in respect of matters not transferred, and matters virtually reserved for the Federal authority, viz., customs, excise, defence, currency, coinage, bounties on production and export (except mining), naturalisation of aliens, extradition, post and telegraphs, lighthouses, etc., quarantine, and some minor matters, including the power to take over State debts, which, however, has not yet been exercised.

On the acceptance of a portfolio in the Federal Government by Sir W. J. Lyne, the premiership passed to Sir John See, whose Ministry took office on the 28th March, 1901.

In view of the growing labour unrest the new Government promptly passed the Industrial Arbitration Act, 1901, the first\* of a series of statutes which had material influence on the subsequent industrial development of the State. The measure was at the time considered a piece of experimental legislation, and its effects were watched with interest. It provided for arbitration in the settlement of industrial disputes, and introduced a system very similar to that existing twenty years later. The Act remained in force until 1908, and during the seven years of its operation there was no extensive dislocation of industry, although a number of minor disputes occurred. Trade Unionism now made rapid headway, and the counter movement among employers resulted in the ultimate formation of two highly organised industrial groups which, under the authority of the State, came to decide, principally in the Arbitration Court, the conditions of employment, and to dominate the economic fortunes of the community. This Act, indirectly, was the first important statutory expression of the Labour movement in New South Wales. It marked the culmination of fifteen years of industrial agitation and of eight years political activity. The events of the years that followed were to be decisively influenced by the young party.

During 1901 the State contributed further contingents of troops for service in South Africa, and co-operated with the other States of the Commonwealth in the detachments sent away in 1902, furnishing also a naval contingent to aid the British forces operating in China. In May, 1901, after opening the first Federal Parliament in Melbourne, their Royal Highnesses the Duke and Duchess of York visited Sydney.

Federation soon produced results of great importance to the State. In October, 1901, the Commonwealth Government imposed uniform Customs duties throughout Australia, and freetrade between the States was established.

The early months of 1902 were marked by a continuance of the drought conditions of the previous year and a rise in the price of meat and of agricultural and dairy produce resulted. Wheat production fell away considerably, the yield being over a million bushels less than in the preceding year, while for the season ended March, 1903, the total harvested was only a million and a half bushels. The marvellous recuperative powers of the State were, however, well evidenced by the returns for the following year, when the wheat harvest exceeded 27,000,000 bushels, a record crop at the time.

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\*Provision for arbitration in settling disputes generally had existed for many years, but statutory provision was first made in New South Wales in 1839. Subsequent Acts were passed in 1867 and 1892. Statutes providing expressly for the settlement of trade disputes in New South Wales by conciliation and arbitration had been enacted in 1892 and 1899.

The South Coast district was again the scene of a disastrous colliery accident in 1902, an explosion in the Mount Kembla Mine being responsible for the deaths of 95 employees.

An important experimental attempt was made in 1902 to obtain a solution for unemployment by establishing land settlements on communal lines. Dissension and lack of industry among the settlers, however, rendered the attempt abortive, and after fifteen years of struggle the land was divided among the holders.

The Federal Parliament, exercising powers conferred by the Constitution, established the High Court in 1903, virtually as a final court of appeal for Australia. But appeals still lay as of right from the Supreme Court direct to the Privy Council in private suits.

In view of the creation of new political representatives by federation the question of further reducing the number of members in the Legislative Assembly was discussed in 1903, and, finally, after a referendum on the question a reduction from 125 to 90 constituencies was effected. Following a redistribution of seats an election was held in 1904, at which women, who had received the franchise in 1902, voted for the first time in New South Wales. A change of government resulted. The new Ministry was led by Mr. T. Waddell, but after two months in office he was replaced by Mr. (now Sir) J. H. Carruthers.

A comprehensive Legislative programme was entered upon. The existing local government law was consolidated, and the powers of local government bodies were extended. By the establishment of shires in 1905 local government was granted to the whole State except in the sparsely populated Western Division. In pursuance of a policy of rural development, important amendments were made in the Closer Settlement Act, approval was given to the Murrumbidgee Irrigation scheme, and the construction of Burrenjack Dam authorised, while the policy of assisted immigration was revived after having been in abeyance since 1888.

One of the last administrative acts of the Government brought it into conflict with the Federal authorities. In August, 1907, a quantity of wire-netting, imported from overseas by the State Government, was landed in Sydney and detained by the Customs officials, who demanded payment of duty. This was refused, and under an order issued by the Executive Government of New South Wales the Government carrier seized and removed portion of the wire-netting without the authority or consent of the Customs officials. Litigation followed, and a case was stated for the opinion of the High Court, which held unanimously that the powers of the Commonwealth with respect to Customs were paramount and exclusive, and that the Customs authorities had, under the Customs Act, 1901, the same rights over the imports of a State Government as they had over the imports of private persons. Order for a penalty against the State for infringement of section 33 of the Customs Act was issued.

During this period prosperity had been almost unbroken. An effective recovery from the crisis of 1893 had been made by the end of the century, minor wars abroad were of too small proportions to affect the State adversely, the drought of 1902 was followed by a succession of good seasons, and the struggle between employees and employers had as yet only begun.

In these favourable circumstances it is not surprising that the State progressed rapidly. During the first seven years of the new century the tonnage of vessels entered and cleared in the ports of New South Wales

increased by more than 50 per cent., the value of exports doubled, while that of imports increased by one-third, and loan expenditure decreased considerably. The value of production in manufactories rose by leaps and bounds. In response to the effective policy of protection and encouragement of local industries pursued by the Commonwealth Government, the first iron and steel works in the State were established at Lithgow in 1907.

But this placid era was soon to be disturbed, and, though progress continued up to the outbreak of war in 1914, signs of stress and strain were becoming increasingly manifest.

A recrudescence of labour troubles began in 1907 with a strike of coal-miners, followed in the next year by an extensive tramway strike, and that again in 1909 by a long and bitterly-contested strike of miners at Newcastle and Broken Hill. The task of settling these disputes, and of facing the new position created by the apparent break-down of the arbitration system, fell on the shoulders of the Government of Mr. (now Sir) C. G. Wade, which had attained office in 1907.

Existing arbitration legislation was allowed to expire in 1908, and was replaced by the Industrial Disputes Act. In 1909, in view of impending trouble among the miners, an amending act was passed, popularly known as "The Coercion Act," to give the police wide powers in taking action against the organisers of strikes. These powers were used against the strike-leaders at Newcastle, several of whom were imprisoned. After four months' struggle the miners returned to work. These strikes were the first of a long series of disastrous conflicts that have done much to set back the mining industry in New South Wales.

A visit to Australia in 1908 by a large fleet of American warships was marked by general festivities, and did much to cement the friendship of the English-speaking races on either side of the Pacific Ocean.

Since 1904 small regard had been paid to the establishment of the seat of Federal Government in New South Wales as provided by the Constitution, and it was not until 1908, after considerable vacillation, that the site at Canberra was finally chosen; further delay ensued, and the site was not formally proclaimed until 1910. Meanwhile the enhancement of the position of the Federal Government and the extension of its powers received considerable attention. Following upon a conference on Imperial Defence held in London in 1909, and a visit of Lord Kitchener to Australia, the Commonwealth began to emerge more distinctly as a separate entity within the Empire. Plans for the establishment of an Australian fleet unit were adopted forthwith, and, in 1911, a system of compulsory universal training for home defence was instituted. The Commonwealth Government, in the exercise of its powers, imposed a Federal Land Tax during 1910, and provided for the issue of Australian notes and the minting of Australian silver coins. The important provision of section 87 (the Braddon clause) of the Constitution, whereby three-fourths of the Customs Revenue was returned to the States, expired on 31st December, 1910, and it was enacted that until 31st December, 1920, the return of surplus revenue should be made on a population basis. The expiry of this period has given the Commonwealth Government a considerable advantage over the States which has, on occasions, been exercised. The keeping of accounts of interstate trade ceased on 3rd September, 1910. In the same year the first of a series of referenda, seeking extended legislative powers for the Commonwealth, was held. But none of the twelve proposals which have been submitted has received the endorsement of the electors.

1910-1920.

The accession of the first Labour Government to office in New South Wales under Mr. J. S. T. McGowen on 21st October, 1910, was largely consequent on the popular disapproval of the former Government's industrial policy. But it marked the achievement of the purpose of twenty years' strenuous political campaigning, and it consummated the movement within the Labour party to attain its objectives through Parliament. A few months earlier the party had obtained its first working majority in the Federal Parliament.

A considerable volume of industrial legislation was now passed, including a new Industrial Arbitration Act. Despite the elaborate machinery for their avoidance, strikes became increasingly common. The continued rise in the cost of living caused a steady decline in effective wages and resulted in considerable discontent. The unrest was most acute in the coal-mining industry.

The important principle of fixing a living wage now forced itself on public attention. In 1911 it was decided that the increase in the cost of living warranted an increase in the Harvester Wage of 1907, which had received extensive application. In February, 1914, the first of a series of living-wage determinations of far-reaching effects was made.

Meanwhile, many important events were happening in other directions. Wireless telegraphy was introduced into the State in 1911, and soon afterwards the first Australian aviator, W. E. Hart, made a successful flight from Sydney to Penrith, while towards the close of the year the cruiser "Warrego," the first to be constructed locally, was launched from Cockatoo Dock. Early in the following year a Small Arms Factory was established at Lithgow, and part of the naval defence programme was realised in 1913 by the arrival of the battle-cruiser "Australia" and the cruisers "Sydney" and "Melbourne."

In the same year the work of constructing the Federal capital at Canberra was initiated. Developmental works proceeded apace, and the opening for settlement of the first irrigation areas under the Murrumbidgee Irrigation Scheme almost synchronised with the signing of an interstate agreement in connection with a similar scheme on the Murray River.

In 1912 considerable extension was made in the scope of the education system of the State. The net results were that a clear connection was established between Primary School and University, and that facilities for a complete education were made available for all capable students, irrespective of their means.

Lord Chelmsford, who had succeeded Sir Harry Rawson as Governor in 1909, was followed in office by Sir Gerald Strickland in 1913. The Labour Party, led by Mr. W. A. Holman, returned from the elections of this year with an increased majority.

The era of prosperity which had dawned at the close of the last century and had induced such rapid progress during the first decade of the new, reached its zenith in the early years of the second decade. The growth of local manufactures continued strongly, great extensions in shipping occurred, trade-unionism developed, and, as a result of the co-ordinated policies of State and Commonwealth, the flow of immigrants from overseas increased rapidly, while at the same time a steady rise in the birth-rate was evident.

But prosperity was fringed with decline. The stream of immigration was retarded in 1913, and at the same time the birth-rate fell. A drought in 1912 depleted the sheep flocks of the State, and the losses accumulated through subsequent droughts until 1920. Moreover, industrial unrest was

increasing as the cost of commodities rose, the expenditure of loan money had advanced rapidly, and, while the value of oversea exports remained almost stationary, that of imports showed considerable increases.

In these circumstances the outbreak of war on 4th August, 1914, added further and more serious troubles to the transient misfortunes of the State. At first it was confidently anticipated that the conflict would reach a speedy termination, and "business as usual" was widely urged. However, this principle was soon found impossible of practical application, and the course of the following years was guided by the dominating influence of the war. The volume of shipping trade contracted rapidly, and fell away to 50 per cent. of its pre-war magnitude on the introduction by Germany of the ruthless submarine campaign at the beginning of 1917. Immigration ceased, and an exodus of the most virile section of the population to the scene of conflict commenced. Production began to suffer heavily, and the falling-off was accentuated by the drought of 1914.

An increased world-demand for raw materials, however, began to operate in favour of the State's products, and, in a large measure, counteracted the adverse effects of the scarcity of imported goods, which embraced most manufactured products. Both causes, however, produced further rapid increases in the cost of living and the unsettled conditions brought to a head grave labour troubles. Legislation was promptly passed to meet the new emergencies. The Commonwealth Government assumed wide powers under the War Precautions Act, by virtue of which it had legal power to do practically anything that might conduce to the effective prosecution of the war. To prevent inordinate rises in prices and to secure a measure of steadiness in markets, the Necessary Commodities Control Act was passed in the State in 1914, and extensive provision for price regulation was made. At the same time the various Governments embarked on a scheme for marketing the entire wheat crops of Australia. The scheme remained operative for the successive seasons until 1920-21. In 1915 legislation was passed in the respective States to ensure an adequate supply of meat for Imperial uses, and in the following year an agreement whereby the Imperial Government purchased the entire wool-clip of Australia for the four seasons 1916 to 1919 was entered upon. These gigantic transactions, which secured for the producer payment or partial payment for his produce on or before delivery, did much to stabilise the financial conditions of the State and to minimise the evil effects of the war at a time when the chaotic market conditions of the world threatened disaster to our export trade in primary produce.

But, while every endeavour was being made to assist the Empire by ensuring an adequate supply of raw materials, a greater measure of support was given in military forces. By 31st December, 1914, more than 30,000 Australian volunteers had embarked for active service overseas, and, by the end of the following year a quarter of a million men had enlisted for service abroad. Still, it was felt that the response was not great enough, and towards the close of 1916 a referendum on the question of compulsory military service abroad was submitted to the people by the Commonwealth Government. The question was decided in the negative by a substantial majority and again by a larger majority a year later. The popular opinion seemed to be that a very ready response had been made voluntarily, and that voluntary recruiting was adequate to secure Australia's share of fighting-men. Moreover, it was widely held that a liberal production of raw materials was vitally necessary to the success of the Empire. This idea had already received expression in the record harvest of 1915, which resulted more from the great efforts of the farmers in extending the area under cultivation than from the favourable season. In the



year 1915 the Commonwealth raised its first war loan of £13,000,000 and imposed the income tax. This was the initiation of a huge war expenditure from local loans, which by September, 1921, had amounted to £250,000,000, of which £105,000,000 was raised in New South Wales.

Meanwhile, though the development of the State was arrested, a number of important works proceeded. The Government Housing Scheme, inaugurated at Daceyville in 1913, was continued; State trawlers were built with a view to exploiting the fishing-grounds of the coast, and providing cheap fish for the people; while, in 1915, the Broken Hill Proprietary Company opened extensive steel works at Newcastle. These works, with a supply of the best coal in close proximity, are destined to foster the development of a large group of subsidiary iron and steel manufactories, some of which were established in 1920.

In 1915 a contract was entered into between the Government and Norton Griffiths and Company (an English firm), whereby the latter undertook a number of important public works, including the construction of the City Railway, at a cost of £6,400,000. The financial stringency of the war period rendered the agreement abortive, and its operation practically ceased in May, 1917. Meanwhile the construction of elevators for handling and storing wheat was forced upon the Government. The lack of shipping facilities rendered the marketing of the wheat crop of the State increasingly difficult after 1916, and a compulsory pooling of all wheat grown was imposed by Act of Parliament in an endeavour to assist the farmers. Market conditions enforced a long storage, and the stocks of wheat accumulated with successive harvests. In 1917 plagues of mice and weevil attacked the huge stacks of bagged wheat in most of the country centres, and considerable loss was sustained. The much-discussed project of bulk-handling of grain now developed into an approved scheme, and the work of constructing the necessary silos began in 1917. Sufficient progress had been made at the beginning of 1921 to enable the handling in bulk of part of the 1920-21 crop.

The division of opinion in the Labour party on the question of conscription, which had been imported into State politics, resulted in a definite break in the movement. At the end of 1916 the supporters of a conscription policy fused into a single organisation, and the National party resulted. The Labour party now went into opposition.

Toward the close of 1916, when feeling was running high on the question of conscription, and when considerable industrial unrest existed, a series of extensive and disastrous fires, which occurred in Sydney warehouses and shops, caused considerable alarm. The discovery of inflammatory materials in connection with several outbreaks led to the conclusion that an extensive system of organised arson was in operation. Police investigations culminated in the arrest of twelve prominent members of the local branch of the Industrial Workers of the World organisation, all of whom were convicted and sentenced to periods of imprisonment ranging from five to fifteen years in connection with the affair. Following upon the report of a Royal Commissioner, all but two of the men were liberated in 1920. Early in 1917 the Commonwealth Government took action to suppress the organisation in Australia.

Active discontent among the workers continued, but the more serious disputes were confined principally to the mining industry, which was in a state of continual ferment accentuated by conditions consequent on the war. In 1917, an agitation which had been gathering head for some time, and which had been fed by the disturbing factors of the conscription referenda, broke out in August—when an attempt was made to in-

introduce a "card system" into the railway workshops—into a strike of the first magnitude, involving all railway and tramway workers, the coal-miners, the gas and meat-trade employees, and the transport workers, including seamen and wharf-labourers. The gravest view of the situation was taken by the Government, and elaborate measures, similar to those of 1890, were taken to keep up the supply of necessary commodities, and to defeat the strikers. The original strike of railway and tramway men was settled on 11th September, but the resumption of work was not general until October. Altogether the strike resulted in the loss of two and a half million working days. Considerable bitterness was engendered by the employment of loyalist workers who, in many cases, were retained in their positions after the strike had terminated. From an industrial standpoint the following year was the most peaceful since 1912, and the Government again introduced palliative legislation. An important amendment to the Industrial Arbitration Act of 1912 provided that strikes, except under certain circumstances, should not be unlawful, and established a Board of Trade with the functions of promoting harmonious relationships between employers and employees and of making an annual declaration of the cost of living.

Sir Gerald Strickland, who had succeeded Lord Chelmsford as Governor in March, 1913, retired somewhat abruptly in April, 1917. A considerable amount of friction had existed for some months between the Governor and his Ministers, and the settlement of the matter was tantamount to an affirmation of the principle that the Governor should not exercise his discretionary powers in constitutional matters of purely local concern. The incident marked the recognition of the full development of the system of responsible government through a Cabinet answerable to Parliament. The retiring Governor carried with him the expressed goodwill of the people of the State. He was succeeded in February, 1918, by Sir Walter Davidson.

On 11th November, 1918, the Armistice between the belligerents in Europe brought to a close the four years of war, and terminated the first phase of a strenuous economic period.

Provision was promptly made in Australia for the reception of the forces from abroad, and for their re-establishment in civilian life. State and Commonwealth worked in unison in the task which was accomplished during the following year without serious dislocation of any kind.

An immediate effect of the cessation of hostilities was to cause a respite in the rise of prices affected by world conditions, and, for a time, it was popularly expected that a period of gradual deflation and a return in some measure to pre-war conditions would follow. But the signs were deceptive, and a period of greater stringency ensued. There was a world-wide scramble to change from a state of war to one of peace, with the result that, following the under-production of goods during the previous four years, and the abnormal consumption, a remarkable scarcity of commodities lent new vigour to the upward movement of prices. It became impossible to maintain a proper balance between wages and the cost of living. Prices rose continuously, and a widespread conviction that profiteering was rife added vehemence to the industrial discontent.

The economic disorder which continued during the two years which followed the close of the war was accompanied by a recrudescence of industrial disputes, which in 1919 and 1920 were more extensive than in any previous year except 1917. A strike which occurred among the Broken Hill miners in May, 1919, continued until November of the following year, and a general upheaval on the coal-fields was averted only when liberal concessions to employees had been made by a tribunal appointed by the Govern-

ment. An extensive strike of seamen occurred; and the bakers throughout the metropolitan area were idle for two weeks during September in support of their demand for higher wages and improved working conditions. To the other misfortunes of the year was added a serious outbreak of influenza, which had already ravaged the world, and which caused more than 6,000 deaths locally.

The exigencies of the period called for considerable governmental activity. The control of prices and devising of effective means to keep down the cost of living exercised the public mind. A general house shortage, resultant from the slackness of building operations during the war, was rendered more acute by the return of the forces from oversea, and private builders and Government schemes were quite unable to meet the demand for accommodation owing to the combined effects of the scarcity of money and the shortage of skilled labour, which continued from September 1919 to June 1920, and affected the whole State.

Unhappily the troubles were accentuated by the advent of a severe drought. The wheat crop of 1919-20 was an almost complete failure, and the long continuance of dry weather caused heavy losses of sheep, whose number fell from 37,000,000 to 29,000,000 during the year. A very extensive system of Government relief to settlers was instituted, and nearly £2,000,000 expended in an endeavour to meet the crisis. Prices of local produce rose to record heights, and added a further serious burden to the already heavy lot of the consumer. However, the bounteous rains of the latter half of 1920 produced a splendid season, and enabled a remarkable recovery in the primary industries. A crop of 55,000,000 bushels of wheat was harvested, and a phenomenal growth of herbage facilitated a more gradual return to prosperity in the pastoral industry.

Considerable progress had been made with the Murrumbidgee Irrigation scheme by 1920, and, though it was still in a developmental stage, extensive settlement had already been made there. In all, nearly 1,000 farms were occupied chiefly in fruit-growing and dairying, and factories for dealing with the settlers' produce were in operation.

The great development in aviation during the war was demonstrated in December, 1919, by Captain Ross Smith, who, with three companions, achieved a flight from London to Australia in thirty days. The flight to Australia from England was accomplished also by Lieutenants Parer and Macintosh a few months later.

During July, 1919, the population of the State reached 2,000,000, having doubled in a period of thirty-two years. A feature of the growth was the rapid rise of Sydney as an industrial and commercial centre. Manufactorys were extended to secondary processes, and accommodation for shipping, including the installation by a private firm of a rapid fuelling device, was greatly increased.

As the date for the State elections of 1920 approached, a considerable wing of the Nationalist party became disaffected, and finally formed a third party to represent country interests under the name of "Progressives." The election, which was contested under the proportional system of voting, resulted in a defeat of the Government. Fifteen members of the new party and a bare majority of the Labour candidates were returned. A Labour Ministry under the leadership of Mr. John Storey was formed, and its attention was at once occupied with a set of difficult problems—more effective price control, profiteering prevention, drought relief, land legislation, and finance.

It was provided in section 109 of the Commonwealth of Australia Constitution Act that "when a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent

of the inconsistency, be invalid." The early decisions of the High Court established between State and Federal Legislatures a doctrine of mutual non-interference except as provided directly by the Constitution. However, in 1920 this principle was abrogated by the High Court in the case of the *Amalgamated Society of Engineers v. the Adelaide Steamship Company, Limited*, and a doctrine, based on section 109, of the supremacy of the Commonwealth powers was formulated.

The visit to New South Wales of His Royal Highness the Prince of Wales in June, 1920, was marked by wonderful demonstrations of loyalty. The enthusiasm with which he was acclaimed on every side was an ample assertion of the goodwill of the nation, and a fitting consummation to the more practical demonstrations of patriotism that had marked the progress of the war.

#### 1921.—

The evil effects of the war on trade were felt perhaps most acutely during 1920 and 1921. The beginning of the former year saw the post-war trade boom reach its height in foreign countries, and decline was not long in appearing in New South Wales. The first sign of a reversal of the economic fortunes came in the form of phenomenal imports to meet the large orders placed abroad to supply the long-felt shortage of goods. Then, after the purchases of local wool by the Imperial Government ceased in June, 1920, the market collapsed, and realisation of the new clip became a slow process, extending until October, 1921. No wheat had been exported during the year, for a small harvest in 1919 had been insufficient to meet local needs, and a large import at high prices became necessary. In addition the market for minerals failed. Exchange turned heavily against the State in England and the depreciated value of the sovereign hampered trade with America. After September, 1920, trade became generally stagnant, and as prices declined profits also diminished. The money market both at home and abroad became very difficult, and interest rates ruled very high. Investment had proceeded rapidly during the early part of the year but, as the months passed, activity slackened and unemployment became rife, while the retail prices of commodities were abnormally dear. House rents remained high, and industrial conditions grew worse during 1921. The possibility of opening relief works was precluded by the scarcity of money and, though Government relief was distributed widely, demonstrations by unemployed were frequent.

Consistent efforts were made to maintain the standard of living and to improve the working conditions of wage-earners. After inquiries by the President of the Arbitration Court, acting as a Royal Commission, the working week was reduced in many trades from forty-eight hours to forty-four, while, in October, 1920, a living wage of £4 5s. per week was declared and applied to the whole State. A Profiteering Prevention Act was passed, and began to operate in January, 1921, but it was rendered practically inoperative by a decision of the Supreme Court a few months later.

After the middle of 1921 conditions showed signs of improving. The price of wool, which in some instances had fallen below pre-war levels, began to revive, the realisation of the large wheat harvest of 1920-21 proceeded satisfactorily at high prices, while in the oversea trade imports declined and exports increased. Prospects in the primary industries were good, but throughout 1921 exchange with London continued difficult. Employment conditions remained bad, and in October a conference of members of the Employers' Federation and the Trades and Labour Council met in Sydney to consider the situation, and recommended that Government relief works be opened.

As a consequence of the fall in prices and the general condition of trade, the living wage was reduced in October, 1921, to £4 2s., but the Government did not put it into operation. A basic wage for rural workers was fixed for the first time, the sum of £3 6s. per week being determined.

Considerable agitation was carried on in the North West and Southern (Riverina) portions of the State for separation from New South Wales as political communities. Widely attended conferences were held, and much propaganda was conducted in favour of rural interests in 1920 and 1921.

Early in October, 1921, the State was deprived of its Premier by the death of the Hon. John Storey, who had been in office eighteen months. He was accorded a State funeral amid general regret and expressions of sympathy throughout the State. A new Ministry was formed on 10th October, under the leadership of Mr. James Dooley. It was, however, shortlived, for on the resignation of the Speaker in December the House became evenly divided, with the obligation on the Government of nominating a new Speaker. The Government succumbed to the crisis, and the Ministry resigned on 13th December. Sir George Fuller was thereupon commissioned to form a Government, which he did on 20th December, but his Ministry resigned on the same day, and a second Administration was formed by Mr. Dooley.

In the last months of 1921 the prolific growth of grasses which had occurred in the western parts of the State after the bountiful rains of 1920, had dried, and proved a source of great embarrassment to pastoralists. As the summer advanced, extensive bush fires ravaged wide areas of pastoral land, destroying pasturage, fences, and, in a few cases, stock and homesteads, but effectively clearing the way for a new growth of grasses. The bountiful season had led to an increase of more than four and a half millions in the number of sheep in the twelve months ended 30th June, 1921.

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An account of the Industrial History of New South Wales from 1901 to 1921 will be found in a later part of this Year Book.

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## CONSTITUTION AND GOVERNMENT.

### *Early Forms of Government.*

ON the foundation of New South Wales as a British penal settlement on 26th January, 1788, the Governor, under his Commission and Letters Patent, was empowered to make ordinances for the government of the settlement, and subsequently he was authorised to impose a limited taxation by customs duties. During the first thirty-five years of the Colony's existence the Governor was possessed of virtually absolute legislative and administrative powers, and the government was military and despotic. Courts of law were established by Letters Patent and by Act of the Imperial Parliament on the foundation of the Colony.

In 1823 a further enactment of the Imperial Parliament provided for the creation of a Legislative Council, with a minimum of five and a maximum of seven members, nominated by the Governor. This Council acted as an advisory body to the Governor, with authority to assist him in making laws and ordinances. Five members were appointed under His Majesty's warrant of 1st December, 1823, and thus a civil though not representative, Government was established.

It was provided that all proposed laws or ordinances should be submitted to a summoned meeting of this Council, and that any action of the Governor contrary to its advice should be referred to the Secretary of State for the Colonies for decision. The first meeting of the Council was held on 25th August, 1824. Practically coincident with the institution of this Legislative Council, which embodied the first form of constitutional government, a Charter of Justice was promulgated. This Charter introduced the present judicial system and inaugurated trial by jury in New South Wales.

The Legislative Council, as constituted in 1823, was increased in 1828 to fifteen members, and its functions were extended; but twenty years of its existence demonstrated the inefficacy of such a limited measure of constitutional government to meet the needs of the expanding commercial and agricultural interests of a rapidly developing population.

In 1843 a measure of direct representation in the Legislative Council was given to the people of the Colony by means of an Imperial enactment of the previous year, which defined the functions of the Council and the conditions under which Royal Assent was to be accorded to bills passed by it, and extended its membership to thirty-six, to comprise twelve nominees of the Crown and twenty-four members elected by the people.

### *Introduction of Present System of Government.*

Eight years' experience of partly representative government proved the necessity for an extension of popular representation. In 1851 the Australian Colonies Government Act of the Imperial Parliament gave authority to the existing Legislative Council to prepare a democratic Constitution for the colonies, and provision was made simultaneously for the establishment of Port Phillip District as a separate colony. In 1853 a select committee of the Council, which then numbered fifty-four (thirty-six elective and eighteen nominee members), adopted a draft Constitution, providing for a Legislature of two Houses. This Constitution, with minor amendments, was accepted by the Imperial Parliament in 1855. The New South Wales Constitution Act, 1855, conferred on the people of New South Wales a fully responsible system of government, including entire control of Crown lands, and power, subject to certain limitations, to make laws amending the Constitution.

The grant of responsible government did not materially diminish the authority vested in the Sovereign, but merely altered the manner in which that authority should be exercised. Legally, the Imperial Parliament retained paramount authority, but actually it ceased to interfere in local affairs. In the despatches covering the Imperial assent to the Constitution Act of 1855, a general rule was laid down for the guidance of the Governor that Her Majesty's Government fully recognised in practice the expediency of leaving local questions to be dealt with by the local legislature.

The first Parliament under the system of responsible Government consisted of one House of 54 members entirely elected, and of a nominee chamber. It was opened by Governor Denison on 22nd May, 1856.

The Constitution has been amended by many Acts, and a consolidating Act was passed in 1902, under which the essential form of the original Legislature remains intact, though its functions have been enlarged from time to time by Imperial enactments, such as those which empower the State Parliament to deal with matters relating to coinage, copyright, shipping, etc. Since 1901, when the Commonwealth of Australia was inaugurated, legislative functions have been divided between the Parliaments of the Commonwealth and of the State.

#### PRESENT SYSTEM OF GOVERNMENT.

The Constitution of New South Wales is not framed completely in the Constitution Act of 1902, and is not entirely written. It is drawn from seven diverse sources, comprising certain Imperial statutes, such as the Colonial Laws Validity Act (1865); the Letters Patent and the Instructions to the Governor; an element of inherited English law; some Federal statutes; sundry State statutes; a large number of legal decisions; and a large element of English and local convention.

The Imperial Parliament is legally omnipotent in local as well as in Imperial affairs, and it may exercise effective control over the affairs of the State by direct legislation and some indirect control through the Secretary of State for the Colonies, by whom the Governor is directed in the exercise of his powers. Imperial legislation forms the basis of the existing Constitution, and the Imperial Parliament regulates all matters of Imperial concern in addition to controlling the extensive powers which remain invested in the Crown by virtue of its prerogative. These include such important matters as foreign relations in peace and war and control of the forces. In local affairs the prerogatives of the Crown are generally exercised by the Governor on the advice of the Executive Council, but where Imperial interests are involved the prerogative powers are exercised through the medium of the Privy Council, the Secretary of State for the Colonies, and the Governor.

#### *The Governor.*

In New South Wales the position of the Governor is primarily that of local representative of the Crown, and through him the powers of the Crown in matters of local concern are exercised. In addition he is titular head of the Government of New South Wales; he possesses powers similar to those of a constitutional sovereign, and he performs those formal and ceremonial functions which attach to the Crown in its august capacity.

His constitutional functions are defined and regulated partly by various statutes, which from time to time cast new duties upon him, partly by the Letters Patent constituting his office and partly by the Instructions to the Governor. The Letters Patent and Instructions were given under the Royal Sign Manual in 1900, and amended in 1909. These functions cover a wide range of important duties, but it is directed that "in the execution of the powers and authorities vested in him the Governor shall be guided by the advice of the Executive Council." He may, if he sees sufficient cause,



dissent from the opinion of the Council and refer the matter to the Imperial authorities through the Secretary of State for the Colonies. The extent of the Governor's discretionary powers, however, tends more and more to contract, though he still possesses important spheres of independent action, such as in granting dissolution of Parliament and in making appointments to the Legislative Council. He is, moreover, entitled to full information on all matters to which his assent is sought, and in this way he may exercise a general supervision over his officers and use his personal influence for the good of the State. The general nature of his position is such that he is guardian of the Constitution and bound to see that the great powers with which he is entrusted are not used otherwise than in the public interests. In extreme cases his discretion constitutes a safeguard against malpractice. His more important constitutional duties are to appoint the Executive Council and to preside over its deliberations; to summon, prorogue, and dissolve the Legislature; to assent, to refuse to assent, or to reserve bills passed by the Legislature; to appoint members of the Legislative Council; to keep and use the Public Seal of the State; to appoint all ministers and officers of State; and, in proper cases, to remove and suspend officers of State. He exercises the King's prerogative of mercy, but only on the advice of the Executive Council, in capital cases, and of a Minister of the Crown in other cases.

With respect to responsibility for his actions the Governor does not occupy the same position as the King. He is amenable to the law; and, though the State accepts responsibility for his official acts, he is personally liable for his unofficial actions, civil and criminal. Politically he is indirectly responsible to the Imperial Parliament through the Secretary of State for the Colonies, but in State politics his Ministers take the responsibility for the advice they give on which he acts. However, in an extreme case where good reason existed the local Legislature would probably be justified in asking for his removal.

The Governor's normal term of office is five years, at a salary of £5,000 per annum, with certain allowances for his staff, provided by the Constitution Act out of the revenues of the State.

The periods for which the Governor may absent himself from the State are limited by the Instructions. When he is absent the Lieutenant-Governor acts in his stead in all matters of State. For that purpose the Chief Justice is usually appointed. In the event of the Lieutenant-Governor not being available to fill the Governor's position, an Administrator assumes office under a dormant Commission appointing the Senior Judge of the State as Administrator.

#### *The Executive.*

All important acts of State are performed or sanctioned by the Governor-in-Council, and, except in the limited spheres where the Governor possesses discretionary powers, he is required, in matters of local concern, to act on the advice of the Executive Council or of a Minister of the Crown.

The Council is established by virtue of the Letters Patent constituting the office of Governor, and it is composed of such persons as the Governor is pleased to appoint. Its members are invariably members of the Ministry formed by the leader of the dominant party in the Legislative Assembly. When a member resigns from the Ministry he also resigns from the Executive Council, otherwise he may be dismissed by the Governor.

The Executive Council meets only when summoned by the Governor, who is required by his Instructions to preside over its deliberations unless absent for "some necessary or reasonable cause." In his absence the permanent Vice-President presides.

*The Ministry or Cabinet.*

In New South Wales the terms "Ministry" and "Cabinet" are synonymous, since both bodies by custom consist of those members of Parliament chosen to administer departments of State and to perform other executive functions. The Ministry is answerable to Parliament for its administration, and it continues in office only so long as it commands the confidence of the Legislative Assembly, from which practically all of its members are chosen. An adverse vote in the Legislative Council does not affect the life of the Ministry. The constitutional practices of the Imperial Parliament with respect to the appointment and resignation of Ministers have been tacitly adopted with some minor modifications. Cabinet acts in a similar way to the English Cabinet under direction of the Premier, who supervises the general legislative and administrative policy and makes all communications to the Governor.

Frequent meetings of Cabinet are held to deliberate upon the general policy of the administration, all the more important business matters of the State, the legislative measures to be introduced to Parliament, and to manage the financial business of the State. Its decisions are carried into effect by the Executive Council or by individual Ministers as the case requires.

Administrative matters of minor importance are determined by ministerial heads of departments without reference to the Executive Council, and every Minister possesses considerable discretionary powers in the ordinary affairs of his department.

Following the death of the late Premier, the Honorable John Storey, on 5th October, 1921, a new Ministry was appointed under the Premiership of the Hon. James Dooley. This Government was defeated in December, and an administration, formed by Sir George Fuller, held office for one day. The Dooley Government which, with slight reconstruction, resumed office on 21st December, was constituted as follows:—

Premier and Chief Secretary—Hon. James Dooley, M.L.A.

Minister for Public Health and Motherhood—Hon. J. J. G. McGirr, M.L.A.

Secretary for Public Works and Minister for Railways—Hon. John Estell, M.L.A.

Minister for Labour and Vice-President of the Executive Council—Hon. E. J. Kavanagh, M.L.C.

Colonial Treasurer—Hon. J. T. Lang, M.L.A.

Minister for Agriculture—Hon. W. F. Dunn, M.L.A.

Secretary for Mines and Minister for Local Government—Hon. George Cann, M.L.A.

Secretary for Lands and Minister for Forests—Hon. P. F. Loughlin, M.L.A.

Minister of Public Instruction—Hon. T. D. Mutch, M.L.A.

Attorney-General—Hon. E. A. McTiernan, M.L.A.

Solicitor-General—Hon. Robert Sproule, M.L.C.

Minister of Justice—Hon. W. J. McKell, M.L.A.

Minister for State Industrial Enterprises—Hon. C. C. Lazzarini, M.L.A.

In 1920 the question of the adequacy of the allowance paid to members of Parliament and of the Ministry was referred to a judge of the Court of Industrial Arbitration, and after inquiry he made certain recommendations, which were carried out by the Parliamentary Representatives Allowance

and Ministers' Salaries (Amendment) Act, 1920, which authorised the following annual payments for salaries from the Consolidated Revenue Fund from 1st November, 1920:—

	£
The Premier .. .. .	2,445
The Attorney-General .. .. .	2,095
The Vice-President of the Executive Council (and leader of the Government in the Legislative Council) ..	1,375
Nine other Ministers of the Crown, £1,945 each ..	17,505
<b>Total .. .. .</b>	<b>£23,420</b>

These amounts are inclusive of the allowance of £875 per annum paid to ordinary members.

There are thirteen Ministers in the present Cabinet, and salaries are apportioned by arrangement.

### *The Legislature.*

The Legislature consists of the Crown and two Houses of Parliament, and all State laws are enacted "by the King's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and the Legislative Assembly in Parliament assembled." It exercises a general power of legislation, and possesses plenary and not delegated authority. The Constitution Act of 1902 provides that "the Legislature shall, subject to the provisions of the Commonwealth of Australia Constitution Act, have power to make laws for the peace, welfare, and good government of New South Wales in all cases whatsoever." It is a constituent body; it can delegate its powers, and within its territory its actions are restricted only by legislation of the Imperial Parliament made to apply to New South Wales, and by valid Federal enactments.

The two Houses of Parliament are the Legislative Council, or Upper House, and the Legislative Assembly, or Lower House. Their powers are nominally co-ordinate, but it is provided that bills appropriating money or imposing taxation and bills affecting itself must originate in the Legislative Assembly, which is the elective Chamber, and which, it is recognised, must control taxation and expenditure. However, bills involving money matters may be introduced only by a Minister on the recommendation of the Governor, and in this way the responsibility of the Ministry for financial measures is secured.

Every member of Parliament must take an oath or make an affirmation of allegiance.

By virtue of the Constitution Act it is a function of the Governor to summon, prorogue, and dissolve both Houses of Parliament, but it is provided that both Houses shall meet at least once in every year, so that a period of twelve months shall not elapse between sessions. The continuity of Parliament is ensured by the Parliamentary Electorates and Elections Act, 1912 (as amended in 1918), which provides that writs for the election of new members must be issued within four days after the dissolution of the Legislative Assembly, that they must be returned within sixty days after issue (unless otherwise directed by the Governor), and that Parliament shall meet within seven days of the return of writs.

It is tacitly agreed that the procedure in each House shall be conducted according to its prototype in the Imperial Parliament, but comprehensive Standing Orders regulating the business of each House have been drawn up. When a disagreement arises between the two Houses each appoints "managers" to confer upon the matters in dispute. There is no provision to meet a deadlock other than by dissolution of the Legislative Assembly,

which may be granted by the Governor. The new Legislative Assembly is regarded as representing the will of the people; and the overwhelming opinion is that the Legislative Council should recognise it.

Much interest and some controversy centres around the powers of the Governor in granting a dissolution of Parliament. Strictly speaking only the Legislative Assembly is dissolved, but Parliament is thereby ended, because both Houses are necessary to constitute a Parliament. There are two main cases in which a dissolution may be granted in addition to that mentioned above; they arise when, on a question of policy, the Ministry sustains an adverse vote in the Legislative Assembly, and when the Legislative Assembly becomes factious, or will not form a stable administration.

#### *The Legislative Council.*

The Legislative Council is a nominee Chamber consisting of a variable number of members appointed for life without remuneration. The Governor at his discretion may summon any person to the Legislative Council, provided that such person is of the full age of 21 years, and is a natural-born subject of his Majesty or naturalised in Great Britain or in New South Wales. In making appointments the Governor acts ordinarily on the advice of the Executive Council, but he may at his discretion refuse to make appointments. Not more than one-fifth of the members summoned to the Council may be persons holding office of emolument under the Crown. The seats of members become vacant by death, resignation, absence, accepting foreign allegiance, bankruptcy, accepting public contracts, or by criminal conviction. The presence of one-fourth of the members, exclusive of the President, is necessary to form a quorum for the despatch of business. The lowest number of members during the past twenty years was fifty-one in 1911. In 1917 there were seventy-one members of the Council, and this number was not exceeded until 1921, when sixteen new appointments were made, and the total membership in December, 1921, was eighty-three.

The Council is presided over by a permanent President appointed from among the members by the Governor. He receives an annual salary of £1,200. There is also a Chairman of Committees, who receives a salary of £700 per annum. As a matter of privilege all members of the Legislative Council are allowed to travel free on State railways and tramways.

#### *The Legislative Assembly.*

The Legislative Assembly is the elective or popular House of Parliament, and has most to do with the Government of the country. By its power over supply it ultimately controls the Executive. It consists of ninety members elected for a period of three years, unless Parliament is previously dissolved. Any person who is enrolled as an elector of the State is eligible to be elected to the Legislative Assembly, except persons who are members of the Federal Legislature or of the Legislative Council, or who hold non-political offices of profit under the Crown, other than in the army or navy. It was provided in 1916 that any officer of the public service of New South Wales may be elected to the Legislative Assembly on condition that he forthwith resign his position in the service. At the close of 1918 all legal impediments to the election of women to the Legislative Assembly were removed. Several women contested seats at the elections of 1920, but none was elected. The seat of a member becomes vacant in similar cases to those stated above for Legislative Councillors.

The House is presided over by a Speaker, whose election is the first business of the House when it meets after election. His functions are most important. He presides over debate, maintains order, represents the House officially, communicates its wishes and resolutions, defends its privileges when necessary, and determines its procedure. There is also a Chairman of

Committees elected by the House at the beginning of each session. He presides over all deliberations of the House in Committee of the Whole, and acts as Deputy-Speaker.

Payment of members of the Legislative Assembly was first made as from 21st September, 1889. The amount originally fixed was £300 per annum, but this was increased to £500 by an Act assented to on 17th September, 1912, and further increased to £875 as from 1st November, 1920, after inquiry and report by a Judge of the Court of Industrial Arbitration. The Speaker's salary is £1,675, and that of the Chairman of Committees and of the Leader of the Opposition £1,115 per annum.

#### *Parliamentary Committees.*

A number of committees consisting of members of Parliament are appointed to deal with special matters connected with the business of the country of either House; and from time to time select committees are chosen to inquire into and report on specific matters for the information of Parliament and the public. Each House elects a committee to deal with its Standing Orders and printing and a joint committee to supervise the library. In addition there are the more important committees described below.

#### *Committees of Supply and of Ways and Means.*

These committees consist by custom of the whole of the members of the Legislative Assembly, and they deal with all money matters. The Committee of Supply debates and determines the nature and amount of the expenditure, and the Committee of Ways and Means debates and authorises the issue of these sums from the Consolidated Revenue Fund and frames the resolutions on which taxing proposals are based.

#### *Parliamentary Standing Committee on Public Works.*

As soon as practicable after the commencement of the first session of every Parliament, a joint committee of members of the Legislative Council and Legislative Assembly, called the Parliamentary Standing Committee on Public Works, is appointed by ballot. This Committee consists of three members of the Legislative Council and four members of the Legislative Assembly, and has power, under the Public Works Act, to prosecute inquiries, to summon witnesses, and to compel the production of books, etc.

The Chairman receives by way of remuneration £3 3s. for each sitting of the Committee, and the other members £2 2s. each.

Proposals for public works of an estimated cost exceeding £20,000 must be submitted and explained by a Minister in the Legislative Assembly, and then referred to the Public Works Committee for report. The election of a Committee was suspended during war time and appointments were not made when the present Parliament was opened. Provision was made in an Enabling Bill, passed in 1920, for the election to be held during the second session of the present Parliament.

#### *Public Accounts Committee.*

For the better supervision of the financial business of the State a Public Accounts Committee is appointed every session under provision of the Audit Act, 1902, from among the members of the Legislative Assembly. It consists of five members, and is clothed with full powers of inquiry into any question arising in connection with the public accounts and upon all expenditure by a Minister of the Crown made without Parliamentary sanction. It reports on these matters to the Legislative Assembly.

#### *Committee of Elections and Qualifications.*

Within seven days of his election the Speaker is required by the Parliamentary Electorates and Elections Act, 1912, to select nine members of the

Legislative Assembly to act on the Committee of Elections and Qualifications. His choice is subject to the approval of the House. The committee is clothed with judicial powers, and each member is required to take an oath of impartiality. Its business is to inquire into and determine all matters connected with the election petitions and all questions referred to it by the Legislative Assembly concerning the validity of any election or the return of any member, and questions involving the qualifications of members.

Its decisions on all matters are final, but it must report to the House.

#### *Commissions and Trusts.*

In addition to the Ministerial Departments, various public services are administered by Commissions, Boards, and Trusts; the more important of these are—

- Railway Commissioners for New South Wales.
- Metropolitan Board of Water Supply and Sewerage.
- Hunter District Water Supply and Sewerage Board.
- Sydney Harbour Trust Commissioners.
- Water Conservation and Irrigation Commission.
- Housing Board.
- Commissioners of the Government Savings Bank of New South Wales.
- Board of Fire Commissioners of New South Wales.
- Metropolitan Meat Industry Board.
- Forestry Commission.

In each case the authority controls a specific service, and administers the statute law in relation to it.

#### *Auditor-General.*

The office of Auditor-General is the real security that public moneys will be collected and expended in accordance with the wishes of Parliament.

The Auditor-General is appointed by the Governor, and holds office during good behaviour. In certain cases he may be suspended by the Governor, but he is removable from office only on an address from both Houses of Parliament. He is required to take an oath that he will faithfully perform his duties, and he is debarred from entering political life. He is endowed with wide powers of supervision, inspection, and audit, with regard to the collection and expenditure of public moneys and the manner in which the public accounts are kept. He exercises control over the issue of public moneys, and all warrants must be countersigned by him. Matters connected with the public accounts are subject to special or annual report to Parliament by him, and he may refer any matter to the Public Accounts Committee.

#### STATE ELECTORAL SYSTEM.

Members of the Legislative Assembly are elected normally at intervals of three years by secret ballot of adult persons who are qualified electors and whose names appear on the electoral rolls. The qualifications of an elector are that he or she be an adult British subject who has resided in the Commonwealth for a period of six months, in the State for three months, and in the Electoral District for one month prior to the issue of the writs for the election. Persons are disqualified from voting who are of unsound mind, a charge on public charity, criminals, habitual drunkards, idlers, vagabonds, disorderly persons, or defaulters from justice. The electoral lists are collected annually by the police, revised before a special court presided over by a Stipendiary or Police Magistrate, and then printed and made available for public inspection. Each elector is entitled to only one vote.

Electors absent from their districts may record their votes at any polling-place in the State, and postal voting is allowed in the case of persons precluded from attendance at any polling-place by reason of illness or infirmity distance over 15 miles, or travelling.



Formerly the State was divided into ninety electoral districts possessing approximately equal numbers of electors and each returning one member. Electoral matters in those districts were supervised by returning officers. In 1918 an Act designed to give effect to the principles of proportional representation was passed, and the whole system was changed. While the number of members remained at ninety the electoral districts were so arranged that each district within the metropolitan and adjacent area and that containing the City of Newcastle should be represented by five members and each of the remaining districts by three members. The result of this redistribution of seats was that twenty-four electorates were constituted—nine returning five members each and fifteen returning three members each.

Polling-day must be not more than forty days after the issue of the writs, and the date and places of polling must be advertised. Polling-day is a public holiday from noon, and during the hours of polling (8 a.m. to 8 p.m.) all hotels are closed. At general elections polling is conducted on the same day in all electorates.

When a vacancy occurred in the Legislative Assembly prior to 1920 it was filled by election under writ issued by the Speaker. No provision was made for by-elections in the Act of 1918, but special provision was made in 1920 whereby any vacancy should be filled by the unsuccessful candidate of the same constituency who represented the same party interest as the late member and whose count of primary preference votes was next highest at the last general election. Where such a candidate was not available, it was provided in 1921 that the leader of the party concerned should nominate a successor.

In 1920 a bill was introduced into Parliament by the Government to abolish the Proportional Representation Act and to revert to the method of single electorates. It was not, however, passed into law.

The following table shows the voting at the elections held in New South Wales since the general election in 1894, when a system based on single electorates and the principle of "one man one vote" was introduced:—

Year of Election.	Total number of Voters on Roll.	Electors per Member.	Total Members returned.	Members unopposed.	Contested Electorates.				
					Electors on Roll.	Votes Recorded.	Percentage of Votes Recorded.	Informal Votes.	Percentage of Informal Votes.
1894—Males ...	298,817	2,390	125	1	254,105	204,246	80·38	3,310	1·62
1895—Males ...	267,458	2,139	125	8	238,233	153,034	64·24	1,354	·88
1898—Males ...	324,339	2,595	125	3	294,481	178,717	60·69	1,638	·92
1901—Males ...	346,184	2,769	125	13	270,861	195,359	72·13	1,534	·79
1904—Males ...	363,062	...	...	...	304,396	226,057	74·26		
Females...	326,428	...	...	...	262,433	174,538	66·51		
Total ...	689,490	7,661	90	2	566,829	400,595	70·67	3,973	·99
1907—Males ...	392,845	...	...	...	370,715	267,301	72·10		
Females...	353,055	...	...	...	336,680	204,650	60·78		
Total ...	745,900	8,288	90	5	707,395	471,951	66·70	13,543	2·87
1910—Males ...	458,626	...	...	...	444,242	322,199	72·53		
Females...	409,069	...	...	...	400,139	262,154	65·52		
Total ...	867,695	9,641	90	3	844,381	584,353	66·80	10,393	1·78
1913—Males ...	553,633	...	...	...	534,379	385,838	72·20		
Females...	484,366	...	...	...	468,437	302,389	64·55		
Total ...	1,037,999	11,533	90	3	1,002,816	688,227	68·63	14,439	2·10
1917—Males ...	574,308	...	...	...	525,681	328,030	62·40		
Females...	535,522	...	...	...	487,585	295,354	60·57		
Total ...	1,109,830	12,331	90	8	1,013,266	623,384	61·54	5,844	·94
1920—Males ...	593,244	...	...	...	593,244	363,115	61·21		
Females...	561,193	...	...	...	561,193	285,594	50·89		
Total ...	1,154,437	12,827	90	...	1,154,437	648,709	56·21	62,900	9·70

Making due allowance for obstacles to voting, especially in sparsely settled districts, the analysis shown above indicates that a large percentage of the electors, particularly women, place little value on their right to vote. It is noteworthy that the highest proportions of electors voted on occasions when the franchise was modified, viz., in 1894 and 1904, when doubtless the element of novelty rendered the right to vote more attractive. The lowest proportion of voters to electors enrolled was recorded in 1920, when it was only 56.22 per cent. The number of females voting has always been less, both relatively and absolutely, than the number of males. At the first election after enfranchisement, 66.5 per cent. of the women enrolled recorded their votes; in 1907, 60.8 per cent. voted; in 1910 and 1913, about 65 per cent.; in 1917, 60.6 per cent.; and in 1920, 50.9 per cent. In the case of men, the highest proportion of votes, 80.4 per cent., was recorded in 1894. At subsequent elections the percentage of votes decreased, the proportion at the elections in 1907, 1910, and 1913 being about 72 per cent. of men enrolled. In 1917 the percentage of voters decreased to 62.4, but in 1920 the percentage fell lower still to 61.2.

In New South Wales there is no law compelling an elector to vote at a parliamentary election, and enrolment as an elector, so far as the State is concerned, was not compulsory until the end of 1921, although the electoral lists were collected by the police under statutory powers. At the elections in March, 1920, there were 1,154,437 names on the State electoral rolls, as compared with 1,079,439 names on the Federal electoral rolls for New South Wales at the Federal elections in December, 1919. Enrolment of Federal electors is secured by a system of compulsory registration, introduced in 1918. It appears that the State system has secured the greater number of enrolments.

Proposals have been made that both Federal and State rolls should be amalgamated, and provisions facilitating this were embodied in the Commonwealth Electoral Act, 1918, but as yet no further steps have been taken in the matter.

It is noteworthy that, whereas at the elections of 1910 and previous years a greater proportion of electors enrolled recorded their votes at State than at Federal elections, the proportion has, since 1913, been greater at Federal than at State elections, viz.—1913: Federal, 69.28 per cent., State 68.63 per cent.; 1917: Federal, 71.17 per cent., State, 61.54 per cent.; 1919: Federal, 66.97 per cent., State (1920), 56.21 per cent.

The number of informal votes cast at elections in New South Wales has fluctuated very greatly, but the proportion has, until 1920, usually been less at State than at Federal elections. At the State elections in 1920 there were 62,900 informal votes, representing the large proportion of 9.70 per cent. of the votes recorded. The system of proportional representation was adopted at this election, and ninety single-member electorates were changed to twenty-four plural-member electorates. Every electorate was contested, and in one there were twenty-one candidates for five seats. All voters were compelled to record their preference for every name shown in the ballot-papers; but many failed to mark the papers in accordance with the requirements of the Act. Postal voting at Commonwealth elections was provided for in 1902, but was in operation for the first time at State elections in 1920. There were 2,773 of these votes, of which 94 were informal. Absent voting, introduced in 1913, was also permitted.

#### *Distribution of Electorates.*

After the Federation of the Australian States the question of again reducing the membership of the Legislative Assembly, which had been reduced from 141 to 125 in 1894, was submitted to the electors by referendum, and, as a result, the number of representatives was reduced to 90 in 1904.

The present Electoral Act provides that electorates are to be redistributed whenever directed by the Governor. In the event of there being no direction by the Governor, a distribution must take place on the expiration of nine years from the date of the last redistribution. The redistribution is made by a special commission of three persons appointed by the Governor from the Public Service of New South Wales.

The following table affords a very interesting summary of parliamentary government since the opening of the first Parliament. It shows at the various dates on which the membership of Parliament or the franchise were altered, and at election years since 1901 (*a*) the size of the elective Chamber, (*b*) the average number of persons in each constituency, and (*c*) the proportion of the population which had a voice in the government through possessing the right to vote. In this way it shows what effects constitutional changes have had on the representative nature of the Legislature.

Year of Election.	Number of Members of Legislative Assembly.	Population per Member.	Percentage of Population Entitled to Vote.	Percentage of Adults to Total Population at Census.
1856	54	5,200	15.8	...
1858	72	4,500	22.3	...
1880	108	6,900	25.2	28.5* (1881)
1885	122	7,800	24.5	...
1891	141	8,100	26.7	28.9*
1894	125	9,800	24.3	...
1901	125	10,900	25.3	28.0*
1904	90	15,900	48.3	...
1907	90	17,000	48.8	...
1910	90	18,200	53.0	55.9 (1911)
1913	90	20,500	56.2	..
1917	90	21,000	58.5	...
1920	90	22,800	56.1	...

\* Males only.

It will be noticed that the franchise has always been very wide and that, when women were permitted to vote, practically the whole of the adult population were electors. The expansion clauses of the Electoral Act of 1880 led to a rapid growth of the Legislative Assembly until it numbered 141 members in 1891, so that when it was limited to 125 members in 1894 and reduced to ninety in 1904 a rapid growth in the size of the constituencies began, and this growth will continue as the population of the State increases.

The number of distinct electors cannot be ascertained for any period prior to the year 1894, and the percentage of the population entitled to vote has been calculated on the total number of votes to which the electors on the roll were entitled; they are, therefore, somewhat in excess of the actual proportions.

*Parliaments.*

A list of the Parliaments since 1889, when payment of members was instituted, is shown below:—

Number of Parliament.	Date of Opening.			Date of Dissolution.			Duration.	Number of Sessions.
							ysrs. mths. dys.	
14	27 Feb.	1889	...	6 June	1891	...	2 3 10	4
15	14 July	1891	...	25 June	1894	...	2 11 11	4
16	7 Aug.	1894	...	5 July	1895	...	0 10 28	1
17	13 Aug.	1895	...	8 July	1898	...	2 10 25	4
18	16 Aug.	1898	...	11 June	1901	...	2 9 26	5
19	23 July	1901	...	16 July	1904	...	2 11 23	4
20	23 Aug.	1904	...	12 July	1907	...	2 10 19	4
21	2 Oct.	1907	...	14 Sept.	1910	...	2 11 12	5
22	15 Nov.	1910	...	6 Nov.	1913	...	2 11 22	5
23	23 Dec.	1913	...	21 Feb.	1917	...	3 1 30	5
24	17 April	1917	...	18 Feb.	1920	...	2 10 8	4
25	27 April	1920	...	Sitting*	...	...	...	...

\* 1st January, 1922.

On account of war conditions and the disturbed state of public affairs it was deemed advisable to extend the 23rd Parliament to a period exceeding the three years fixed by the Constitution Act, and the Legislative Assembly Continuance Act, 1916, was passed to provide for an extension from three years to four years. The Parliament, however, terminated after 3 years 1 month 30 days.

*State Ministries.*

The various Ministries which have held office since 1894, together with the duration in office of each, are shown below. The life of a Ministry is not co-terminous with the life of a Parliament. In sixty-five years under the present system there have been forty Ministries, but only twenty-five Parliaments. Up to the 3rd August, 1894, twenty-seven Ministries had held office.

Ministry.					In Office.		Duration.
Number.	Name.				From—	To—	
							ysrs. mths. days.
28	Reid ...	...	...	...	3 Aug. 1894	13 Sept. 1899	5 1 11
29	Lyne ...	...	...	...	14 Sept. 1899	27 Mar. 1901	1 6 14
30	See ...	...	...	...	28 Mar. 1901	14 June 1904	3 2 18
31	Waddell ...	...	...	...	15 June 1904	29 Aug. 1904	0 2 15
32	Carruthers ...	...	...	...	30 Aug. 1904	1 Oct. 1907	3 1 2
33	Wade...	...	...	...	2 Oct. 1907	20 Oct. 1910	3 0 19
34	McGowen ...	...	...	...	21 Oct. 1910	29 June 1913	2 8 9
35	Holman ...	...	...	...	30 June 1913	15 Nov. 1916	3 4 16
36	Holman ...	...	...	...	16 Nov. 1916	11 April 1920	3 4 27
37	Storey ...	...	...	...	12 April 1920	9 Oct. 1921	1 5 28
38	Dooley ...	...	...	...	10 Oct. 1921	20 Dec. 1921	0 2 3
39	Fuller...	...	...	...	20 Dec. 1921	21 Dec. 1921	0 0 1
40	Dooley ...	...	...	...	21 Dec. 1921	In office.*	.....

\* 1st January, 1922.

## COST OF PARLIAMENTARY GOVERNMENT.

The following statement shows the cost of Parliamentary Government in New South Wales during the last five years ended 30th June. Expenses of Federal Government are not included:—

Head of Expenditure.	1917.	1918.	1919.	1920.	1921.
<b>Governor—</b>	£	£	£	£	£
Governor's Salary ... ..	5,000	5,000	5,000	5,000	5,000
Official Secretary ... ..	400	400	400	440	536
Clerk ... ..	...	...	...	259	305
Private Secretary ... ..	350	...	...	...	...
Aide-de-Camp ... ..	290	...	...	...	...
Orderlies ... ..	85	210	255	267	290
Repairs and Maintenance of Residences	1,399	886	1,019	2,274	2,959
Miscellaneous ... ..	2,570	2,780	2,374	923	1,012
<b>Total ... ..</b>	<b>£ 10,094</b>	<b>9,276</b>	<b>9,048</b>	<b>9,163</b>	<b>10,082</b>
<b>Executive Council—</b>					
Salaries of Officers... ..	145	115	100	250	317
Other Expenses ... ..	...	...	12	257	150
<b>Total ... ..</b>	<b>£ 145</b>	<b>115</b>	<b>112</b>	<b>507</b>	<b>467</b>
<b>Ministry—</b>					
Salaries of Ministers ... ..	11,040	11,040	11,040	10,924	21,866
Other Expenses... ..	988	2,291	843	801	1,436
<b>Total ... ..</b>	<b>£ 12,028</b>	<b>13,331</b>	<b>11,883</b>	<b>11,725</b>	<b>23,302</b>
<b>Parliament—</b>					
<b>The Legislative Council—</b>					
Railway Passes ... ..	£ 6,929	8,432	8,849	10,430	12,455
<b>The Legislative Assembly—</b>					
Allowances to Members ... ..	37,681	40,607	40,743	37,392	57,819
Railway passes ... ..	11,262	10,841	11,705	13,821	16,398
Other Expenses (Postage Stamps, etc.)	1,753	5,455	1,777	1,836	2,752
<b>Miscellaneous—</b>	<b>£ 50,696</b>	<b>56,903</b>	<b>54,225</b>	<b>53,049</b>	<b>76,969</b>
Fees and expenses of Parliamentary Standing Committee on Public Works	3,833	4	...	...	2,957
Salaries of Officers and Staff ... ..	21,339	22,656	21,927	23,654	25,753
Printing ... ..	17,158	13,110	10,452	13,219	15,016
Hansard (including Salaries) ... ..	6,969	6,925	7,162	7,147	8,988
Library ... ..	544	565	767	874	775
Water, Power, Light, and Heat ... ..	462	552	508	630	565
Postage, Stores, and Stationery ... ..	596	2,606	686	1,169	1,702
Refreshment Rooms ... ..	...	...	...	...	...
Miscellaneous ... ..	2,489	1,329	2,109	2,215	1,856
<b>Total Parliament</b>	<b>£ 111,015</b>	<b>113,082</b>	<b>106,685</b>	<b>112,387</b>	<b>147,036</b>
<b>Electoral Office and Elections—</b>					
Salaries ... ..	1,832	1,307	1,301	1,629	*
Elections, Printing of Electoral Rolls, Expenses of Electoral Registrars, and Contingencies ... ..	50,047	20,995	8,534	82,084	*
<b>Total ... ..</b>	<b>£ 51,879</b>	<b>22,302</b>	<b>9,835</b>	<b>83,713</b>	<b>*</b>
<b>Royal Commissions and Select Committees</b>					
Fees, etc. ... ..	6,171	3,872	10,466	7,012	7,274
Miscellaneous ... ..	...	...	...	11,587	12,206
<b>Total ... ..</b>	<b>£ 6,171</b>	<b>3,872</b>	<b>10,466</b>	<b>18,599</b>	<b>19,480</b>
<b>GRAND TOTAL ... ..</b>	<b>£ 191,332</b>	<b>161,978</b>	<b>148,029</b>	<b>236,094</b>	<b>200,367†</b>
<b>Per Head of Population ... ..</b>	<b>2s. 1d.</b>	<b>1s. 8d.</b>	<b>1s. 6d.</b>	<b>2s. 4d.</b>	<b>1s. 11d.†</b>

\* Not available. † Total, excluding cost of Electoral Office and Elections.

The cost of Parliamentary Government in 1920-21 represents less than 2 per cent. of the governmental expenditure during that year, that is excluding expenditure on business undertakings.

## THE COMMONWEALTH.

The formal inauguration of the Commonwealth of Australia took place on 1st January, 1901. It was formed by the federation of the six Australian States into a new political community. It came into being by the spontaneous desire of the people of Australia who determined its form by a series of conventions. These conventions drafted the proposed Constitution which, after approval by the electors of the States, was transmitted to the Imperial Parliament for consideration and approval. After slight amendment it received the Royal Assent on 9th July, 1900.

Federation was designed to confer on the people of Australia those benefits which would accrue when matters of common concern were controlled by a strong central authority.

Definite powers were assigned to the Federal Parliament by the Constitution which limited the legislative powers of Federal and State Parliaments. Though authority was not given to the Federal Government to annul or disallow legislation of the State, it was provided that valid Federal enactments should be supreme, and the High Court was constituted to determine, among other things, the validity of Federal and State legislation and Executive action. The Federal and State Governments are independent of each other, since each possesses its own legislature, executive, and courts, but the High Court is head of both Federal and State judicial systems. Under the Commonwealth of Australia Constitution Act, the Parliament of the Commonwealth is empowered to make laws exclusively on matters of defence, customs and excise, naturalisation and aliens, bounties on production and export, and borrowing on the public credit of the Commonwealth, and laws concurrent with or supersessory to State laws on matters affecting the peace, order, and good government of the Commonwealth, particularly with respect to the following:—Trade and commerce with other countries and among States; taxation; postal, telegraphic, and telephonic services; light-houses; astronomical and meteorological observations; quarantine; fisheries; census and statistics; currency; banking; insurance; weights and measures; bills of exchange and promissory notes; bankruptcy; copyright; patents and trade marks; foreign corporations and trading or financial corporations formed within the Commonwealth; marriage; divorce; invalid and old-age pensions; migration; external affairs; railway control in relation to defence and railway acquisition or construction, subject to the consent of the State; conciliation and arbitration in regard to disputes extending beyond the limits of one State.

Amendment to the Constitution of the Commonwealth may not be made without popular approval. The law embodying the proposed amendment must be submitted to a referendum of electors not less than two nor more than six months after its passage through both Houses of Parliament, and must be approved by a majority of electors voting, in a majority of the States, as well as in the whole Commonwealth before receiving the Royal Assent. The Constitution has been altered by the Constitution Alteration (Senate Elections) Act, 1906, and the Constitution Alteration (State Debts) Act, 1909.

The Parliament of the Commonwealth is empowered specifically to legislate on any matter referred to it by the Parliament or Parliaments of any State or States, but so that the law made shall extend only to the States which are parties to the reference; otherwise there must be no discrimination between States.



Outside the specific functions of the Commonwealth the Constitution of each State continues as at the establishment of the Commonwealth, and the Parliament of New South Wales has legislative power in all matters not exclusively within the functions of the Commonwealth.

#### *Commonwealth Executive Government.*

The Crown is represented by the Governor-General of Australia, who is appointed by the King. As representative of the King, the Governor-General is Commander-in-Chief of the Naval and Military Forces. His office carries a salary of £10,000 per annum, and the amount is not alterable during his occupancy of office.

The Governor-General's powers and functions are assigned to him under his Commission, subject to the Constitution; as head of the Legislature he appoints the times for holding sessions of Parliament, prorogues Parliament, and dissolves the House of Representatives. In his Executive Government he is advised by the Executive Council, which is composed of members summoned by the Governor-General, being Ministers of the Crown administering Commonwealth Departments.

#### *Commonwealth Parliament.*

The Parliament of the Commonwealth consists of the King, a Senate, and a House of Representatives. The King is represented by the Governor-General.

The Senate is an elective Chamber consisting of six representatives of each State elected by the people voting as one electorate. One-half of the members retire triennially, so that the Senate is a continuous body. Its functions are not merely to revise legislation; it is charged in a special way with the representation of the interests of the States. Writs for Senate elections are issued by the State Governors, and the State controls the procedure of election.

The House of Representatives is also an elective Chamber constituting the national element in the Federal Parliament of which it is the dominant part. It consists of approximately twice as many members as the Senate, and the number of representatives is determined in the following way:—The number of people in the Commonwealth is divided by twice the number of Senators to obtain a quota; the number of people in each State is divided by this quota, and the number resulting is the number of members allotted to the State with one more if the remainder exceeds half the quota. Such determinations are made every five years. It is provided, however, that no State shall have less than five representatives. There are, at the present time, 75 members in this House, the number from New South Wales being 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5. The number from New South Wales will be increased by one and the number from Victoria decreased by one as a result of the census of 1921. A commission for the redistribution of seats in New South Wales was appointed in October, 1921.

The House of Representatives is liable to dissolution at the discretion of the Governor-General if the Ministry loses its majority, otherwise it exists for three years from the date on which the House first meets after election.

In the event of the failure of the Senate and House of Representatives to agree on the subject of any proposed law, the Governor-General may dissolve both Chambers simultaneously, and if the new Houses disagree, the Governor-General may convene a joint sitting of the members of the Houses to deliberate and vote upon the proposed law, when.

resolutions, to be effective, must be carried by an absolute majority of all the members. This furnishes the first example within the British Empire of a provision for a joint session to overcome a deadlock.

A session of Parliament must be held at least once in every year, with a maximum interval of twelve months between sessions.

The powers of the Houses are co-ordinate except that proposed laws appropriating revenue or money or imposing taxation may not originate with the Senate.

The qualifications of members of the Commonwealth Parliament are the same for both Houses; candidates for election must be adult British subjects natural born or naturalised for five years, resident within the Commonwealth for at least three years and entitled to vote. The allowance attaching to the office of member was originally £400 per annum, but was raised by Parliament in 1907 to £600 per annum and during the year 1920 to £1,000 per annum. To a Senator or member of the House of Representatives who holds office as a Minister of State, President of the Senate, Speaker of the House of Representatives, Chairman of Committees of the Senate, or Chairman of Committees of the House of Representatives, the allowance is £800 a year, in addition to the emoluments of his office. The Leader of the Opposition in the Senate receives an allowance of £200 a year, and the Leader of the Opposition in the House of Representatives £400 a year in addition to any other allowance. The seat of a member becomes vacant if he is absent without leave for two consecutive months of any session.

The qualifications of electors are the same for both Federal Houses. Electors must be adult British subjects, who have lived in Australia for six months continuously. Aboriginal natives of Australia, Asiatics, Africans, and Pacific Islanders, except natives of New Zealand, are disqualified unless entitled to vote at the election of a State Legislative Assembly.

The Commonwealth Electoral Act, 1918-19 provides for a system of preferential voting at elections for the House of Representatives.

#### *Federal Elections.*

The last Federal Elections took place on 13th December, 1919. The following table shows the votes polled at the Senate Elections in the State of New South Wales :—

Election. Year.	Electors Enrolled.		Votes Recorded.		Informal Votes.	Percentage of Votes Recorded to Electors Enrolled.		
	Men.	Women.	Men.	Women.		Men.	Women.	Total.
1901	329,093	...	220,573	...	38,674	67·02	...	67·02
1903	360,285	326,764	189,877	134,487	15,796	52·70	41·16	47·21
1906	392,077	345,522	229,654	151,682	28,016	58·57	43·90	51·70
1910	444,269	390,393	301,167	211,635	24,213	67·79	54·21	61·44
1913	554,028	482,159	405,152	312,703	48,195	73·13	64·85	69·28
1914	576,309	506,820	407,464	294,939	34,984	70·70	58·19	64·85
1917	566,345	528,489	430,514	343,143	29,625	76·02	64·93	70·66
1919	550,363	529,076	400,477	317,088	67,227	72·77	59·93	66·48

The votes recorded in the State of New South Wales at the elections of members of the House of Representatives were as follow:--

Election. Year.	Electors Enrolled (Contested Divisions only).		Votes Recorded.		Informal Votes.		Percentage of Votes Re- corded to Electors Enrolled.		
	Men.	Women.	Men.	Women.	Number.	Proportion per cent.	Men.	Women.	Total.
1901	315,962	...	215,105	...	4,070	1.70	68.08	...	68.08
1903	303,254	274,763	164,133	118,381	7,834	2.77	54.12	43.08	48.88
1906	363,723	314,777	216,150	141,227	11,705	3.28	59.43	44.87	52.67
1910	431,702	379,927	294,049	207,868	8,002	1.59	68.11	54.71	61.84
1913	554,028	482,159	405,152	312,703	22,262	3.10	73.13	64.85	69.28
1914	491,086	429,906	351,172	257,581	14,816	2.43	71.51	59.92	66.10
1917	484,854	447,437	370,618	292,925	19,874	2.98	76.44	65.47	71.17
1919	527,779	508,129	385,614	308,183	26,517	3.82	73.06	60.65	66.97

The percentage of voters increased steadily at the elections during the period 1903-1913; the improvement was not continued in 1914, when the electoral contest was modified in consequence of the outbreak of war in Europe, but in 1917, when considerable political feeling was excited by the question of conscription, the percentage was the highest since the inauguration of the Commonwealth Parliament.

#### FEDERAL MINISTRIES.

The following statement shows the various Ministries which have held office since the inauguration of the Commonwealth, and their duration:—

Ministry.		From—	To—	Duration.
Number.	Name.			
1	Barton ... ..	1 Jan., 1901...	23 Sept., 1903...	ys. mths. dys. 2 8 23
2	Deakin ... ..	23 Sept., 1903...	26 April, 1904...	0 7 3
3	Watson ... ..	26 April, 1904...	17 Aug., 1904...	0 3 22
4	Reid-McLean ... ..	17 Aug., 1904...	4 July, 1905...	0 10 17
5	Deakin ... ..	4 July, 1905...	12 Nov., 1908...	3 4 8
6	Fisher ... ..	12 Nov., 1908...	2 June, 1909...	0 6 21
7	Deakin ... ..	2 June, 1909...	29 April, 1910...	0 10 27
8	Fisher ... ..	29 April, 1910...	20 June, 1913...	3 1 22
9	Cook ... ..	20 June, 1913...	17 Sept., 1914...	1 2 28
10	Fisher ... ..	17 Sept., 1914...	27 Oct., 1915...	1 1 10
11	Hughes ... ..	27 Oct., 1915...	14 Nov., 1916...	1 0 18
12	Hughes ... ..	14 Nov., 1916 ..	17 Feb., 1917...	0 3 3
13	Hughes ... ..	17 Feb., 1917..	8 Jan., 1918...	0 10 22
14	Hughes ... ..	10 Jan., 1918...	In Office* ...	...

\* 1st January, 1922.

During this period there have been eight Parliaments. It will be observed that the Ministries in the second Parliament were particularly unstable, and that during the war there were frequent reconstructions of the Hughes Ministries. The Ministry at present in office has enjoyed the longest term of any since the Commonwealth was established.

#### FEDERAL REFERENDA.

Federal Referenda have been of three kinds—those held prior to the enactment of the Constitution in order to secure popular sanction to the terms of Federation, those under section 128 of the Constitution providing for its amendment, and those held for the purpose of obtaining the opinion of the electors on important matters for the guidance of Parliament.

Though at the first referendum on the question of Federation a substantial majority in favour of the bill as drafted by the Convention was obtained, the statutory vote of 80,000 in New South Wales in favour of the measure was not secured, and the bill was therefore not accepted. After modifications had been made to accord with the desires of the people of New South Wales, the proposed Constitution was again submitted to the popular vote and accepted by a large majority polled principally in the younger States. The following is an analysis of the voting:—

Date.	Referendum.	State of New South Wales.			Australia.			
		For.	Against.	Majority	For.	Against.	Result.	Majority.
1898	Federation ... ..	71,595	66,228	5,367	219,712	108,363	R	111,349
1899	Federation ... ..	107,420	82,741	24,679	422,788	161,077	A	261,711

The Referendum (Constitution Alteration) Act, 1906–19, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

The following statement shows the votes recorded in the State of New South Wales and in the Commonwealth at the various referenda which have been taken under the abovementioned Act:—

Date.	Referendum.	State of New South Wales.			Commonwealth of Australia.			
		For.	Against.	Majority	For.	Against.	Result.	Majority.
1906	Senate Elections...	286,888	55,261	231,627	774,011	162,470	A	611,541
1910	Financial Agreement ...	227,650	253,107	25,457	645,514	670,838	R	25,324
1910	State Debts ... ..	159,275	318,412	159,137	715,053	586,271	A	128,782
1911	Legislative Powers ...	135,968	240,605	104,637	483,356	742,704	R	259,348
1911	Monopolies ... ..	138,237	238,177	99,940	488,668	736,392	R	247,724
1913	Trade and Commerce ...	317,848	359,418	41,570	958,419	982,615	R	24,196
1913	Corporations ... ..	317,668	361,255	43,587	960,711	986,824	R	26,113
1913	Industrial Matters ...	318,622	361,044	42,422	961,601	987,611	R	26,010
1913	Railway Disputes ...	316,928	361,743	44,815	956,358	990,046	R	33,688
1913	Trusts ... ..	319,150	358,155	39,005	967,331	975,943	R	8,612
1913	N <sup>n</sup> lisation of Monopolies	301,192	341,724	40,532	917,165	941,947	R	24,782
1919	Legislative Powers ...	259,751	390,450	130,699	911,357	924,160	R	12,803
1919	N <sup>n</sup> lisation of Monopolies	227,156	365,847	138,691	813,880	859,451	R	45,571

A: Accepted. R. Rejected.

In 1916 and in the following year referenda were taken in relation to a proposal that the Government be empowered during the war to compel citizens to serve with the military forces outside the Commonwealth. In

1916 the proposal was rejected in New South Wales, Queensland, and South Australia, and in 1917 in all States except Western Australia and Tasmania. The following is an analysis of the voting on each occasion:—

Date:	Referendum.	State of New South Wales.			Commonwealth of Australia.		
		For.	Against.	Majority Against.	For.	Against.	Majority Against.
1916	Military Service... ..	356,805	474,544	117,739	1,087,557	1,160,033	72,476
1917	Military Service... ..	341,256	487,774	146,518	1,015,159	1,181,747	166,588

#### SEAT OF FEDERAL GOVERNMENT.

The Federal Capital Territory, formerly part of the State of New South Wales, is situated in the upper basin of the Murrumbidgee River, being watered by its tributaries, Molonglo and Cotter. The site chosen for the capital city, is 5 miles distant from Queanbeyan, with which it is connected by rail.

The agreement under section 125 of the Commonwealth Constitution Act, between the State of New South Wales and the Commonwealth, for the surrender and acceptance of territory for the seat of Federal Government was ratified, and an ordinance issued on 22nd December, 1910, for the Provisional Government of the Territory. On 12th March, 1913, the official ceremony took place in connection with the establishment of the seat of Government and the selection of Canberra as the name of the capital city announced. All laws hitherto in force in the Territory (except those imposing duties on estates of deceased persons) remain in force and continue to be administered by the State authorities. All revenue belongs to the Commonwealth. The authority of State magistrates, gaolers, and police continues, and all offenders are tried in the Courts of the State. Licenses to sell intoxicating liquors are not granted, and existing licenses may be renewed for the same premises only.

Although the site was chosen in 1908 the seat of Government is still in Melbourne, Victoria.

## DEFENCE.

UPON the inauguration of the Commonwealth the duty of providing for the defence of Australia devolved upon the Federal Government, and the Parliament of the Commonwealth has paramount power, subject to Imperial approval to legislate for the naval and military defence of Australia, and for the control of the forces to execute and maintain the Federal laws. The Constitution provides that the States may not raise or maintain forces, but enjoins the Commonwealth to protect every State against invasion, and on the application of the Executive Government of the State, against domestic violence.

A system of universal training for Home Defence was brought into operation on 1st January, 1911, persons who reached the age of 18 years in or before the year 1911 being exempted.

The prescribed annual training is as follows:—

Force.	Age.	Service.	Training.
	years.	years.	
Junior Cadets ... ..	12-14	2	90 hours each year.
Senior Cadets ... ..	14-18	4	Minimum service, 64 hours per annum. Drills to be normally of 2½ hours' duration, but may be altered to suit local conditions; 35 hours must be in employer's time and 29 hours in cadet's time.
Citizen Forces— Naval Forces, Artillery and Engineer Arms, and Army Service Corps.	18-25	7	Drills equivalent to 25 whole days (six hours) of which at least, 17 days must be in camps of continuous training.
Other ... ..	18-25	7	Drills equivalent to 16 whole days (six hours), of which, at least, 8 days must be in camps of continuous training.
Citizen Forces ... ..	25-26	1	One registration or one muster parade.

Members of Senior Cadets and Citizen Forces who have not attained a required standard of efficiency during each annual training must attend an equivalent additional training for each year in which they failed to qualify as efficient.

Exemptions from training in time of peace may be granted on account of medical unfitness, or distance from training places, also in cases where attendance would impose great hardship. Persons who have been on war service are not required to undergo training, and those not substantially of European origin are exempt except from duties of a non-combatant nature.

On account of the sparsity of population in the western interior of the State, training has not yet been inaugurated over considerable areas.



In time of war the following classes of citizens are liable for service in the order mentioned:—

1. From 18 to 35 years of age—All unmarried men or widowers without children.
2. From 35 to 45 years of age—All unmarried men or widowers without children.
3. From 18 to 35 years of age—All married men or widowers with children.
4. From 35 to 45 years of age—All married men or widowers with children.
5. All men aged 45 to 60 years.

The Commonwealth is organised for Defence purposes into six military districts, corresponding as far as practicable with the political divisions into States. The second military district represents the State of New South Wales, excepting the North Coast district, the Barrier district, which are attached to Queensland and South Australia respectively, and the Deniliquin, Moama, and Corowa districts attached to Victoria.

The following table contains information regarding the military forces of the Commonwealth on 30th June, 1921:—

Classification.	Military District.						Total.
	1st. Queens- land.	2nd. New South Wales.	3rd. Victoria.	4th. South Australia.	5th. Western Australia.	6th. Tasmania.	
Permanently employed	279	741	708	146	199	122	2,310*
Citizen Soldiers ...	12,217	38,307	27,544	10,295	4,413	4,164	96,940
Engineer and Railway Staff Corps ...	8	11	7	5	9	4	44
Unattached list of Officers ...	33	123	122	39	18	10	345
Chaplains ..	78	96	77	26	44	24	345
Senior Cadets ...	11,236	38,148	28,057	9,622	5,755	3,475	96,293
Total ...	23,851	77,426	56,515	20,133	10,438	7,799	196,277*

\* Includes 115 miscellaneous.

#### JUNIOR CADETS.

The training of Junior Cadets embraces physical training, elementary marching drill, and the attainment of a certain standard of efficiency in not less than one of the following subjects:—Miniature rifle shooting, swimming, running in organised games, first aid. In schools in the naval training areas instruction is given also in mariners' compass and elementary signalling. The training is commenced on 1st July of the year in which the cadet reaches the age of 12 years and is conducted by school teachers, who are instructed for this purpose by a staff of instructors maintained by the Defence Department.

Junior Cadets are not required to register, but are examined medically. Particulars regarding the medical examinations during the training year ended 30th June, 1921, are given in the following table :—

Military District.	Boys medically examined.			Percentage of total examined.	
	Total.	Medically Fit.	Unfit and Temporarily Unfit.	Medically Fit.	Unfit and Temporarily Unfit.
1st—Queensland ... ..	6,155	6,038	117	98·1	1·9
2nd—New South Wales ...	20,544	20,266	278	98·6	1·4
3rd—Victoria ... ..	15,666	15,237	429	97·2	2·8
4th—South Australia ...	5,546	5,466	80	98·6	1·4
5th—Western Australia ...	3,918	3,809	109	97·2	2·8
6th—Tasmania ... ..	1,723	1,680	43	97·5	2·5
Commonwealth ... ..	53,552	52,496	1,056	98·0	2·0

#### SENIOR CADETS.

Boys are required to register for military training as Senior Cadets in January and February, and to commence training on 1st July of the year in which they reach the age of 14 years. After medical examination they are organised into naval or military units, and receive instruction in moral and mental training, physical training, recreational training, military training, comprising the elements of drill and musketry, and voluntary subjects, such as swimming, life-saving, first-aid, knotting and lashing, and other subjects suitable to boys, but are not required to attend camp. The minimum efficient service of Senior Cadets is 64 hours per annum, of which 35 hours are performed in the employer's time, the remainder in the leisure time of the cadet. The following return shows the number of registrations and medical examinations of Senior Cadets during the training year ended 30th June, 1921 :—

Military District.	Total Registrations.	Medically Examined during Year.	Medically Fit.		Exemptions Granted.	Number actually in Training.
			Number.	Percentage of Medically Examined.		
1st—Queensland ... ..	18,911	3,279	3,032	92·5	4,072	11,236
2nd—New South Wales ...	57,285	9,395	8,915	94·9	7,846	38,148
3rd—Victoria ... ..	42,870	7,331	6,889	94·0	6,014	28,057
4th—South Australia ...	14,904	2,903	2,601	89·6	2,490	9,622
5th—Western Australia ...	10,205	1,805	1,701	94·2	2,473	5,755
6th—Tasmania ... ..	5,828	892	826	92·6	1,378	3,475
Commonwealth ... ..	150,003	25,605	23,964	93·6	24,273	96,293

It will be seen that a rather large proportion failed to pass the medical examination, but that proportion would be reduced by the exclusion of lads deemed only temporarily unfit.

#### CITIZEN FORCES.

On 1st July of the year in which the Senior Cadets reach the age of 18 years they are transferred, after medical examination, to the Citizen Forces, where they serve for seven years. Except in the last year of this service (when only one muster parade is necessary) the continuous training is 17 days per annum for specialist and technical corps, and 8 days per annum for other corps.

#### NAVAL DEFENCE.

The Naval Defence of Australia was maintained by the Imperial Navy under agreement between the Imperial Government and the Governments of Australia and New Zealand until 1913, when the Imperial squadron was replaced by Australian war vessels.

The fleet of the Australian Navy consists of 1 battle cruiser, 4 light cruisers 1 flotilla leader, 5 modern destroyers, 6 destroyers (river class), 1 submarine parent ship, 6 submarines, 3 sloops, 2 fleet auxiliaries, 3 minor vessels, and 1 light cruiser in course of construction. Of these, the following are in reserve:—1 battle cruiser, 1 light cruiser, 8 destroyers, 1 sloop, and 3 submarines. Six seaplanes are in use in connection with the sea-going force.

The naval forces consist of permanent forces numbering, on 15th October, 1921, 437 officers and 4,307 men, of whom about seventy-five per cent. of officers and seventy-four per cent of men were Australians, the remainder being on loan from the Royal Navy.

Reserves of officers and men for the Royal Australian Navy are provided from four services:—

- (a) The Royal Australian Fleet Reserve. (Ratings who have completed periods of service.)
- (b) The Royal Australian Naval Reserve. (Officers and men permanently employed.)
- (c) Royal Australian Naval Reserve. (Compulsory trainees of Citizen Forces.)
- (d) Royal Australian Naval Volunteer Reserve. (Volunteers enrolled for service in any capacity in time of war or emergency.)

Junior officers of the Navy are trained at the Naval College, Jervis Bay, and junior seamen ratings are trained on the H.M.A.S. "Tingira" at Sydney.

The general depot of the Navy is at Westernport, Victoria, where the more advanced training of officers and men is carried on.

#### WAR CONTINGENTS.

Although service in the military forces beyond Commonwealth territory is not obligatory, in time of war contingents of volunteers have been sent from Australia to co-operate with the Imperial Forces.

Prior to Federation a war contingent numbering 770 men with 218 horses was despatched from New South Wales to the Soudan campaign, in 1885. The strength of the military contingents from all the Australian States to the South African war, which commenced in 1899, numbered 848

officers and 15,327 other ranks, and 16,314 horses. Of this total New South Wales sent 314 officers, 5,796 other ranks, and 5,872 horses. A naval contingent, consisting of 260 volunteers from New South Wales, and 200 from Victoria, and a gunboat from South Australia, proceeded to China at the time of the Boxer rebellion in 1900 to assist the British forces.

### EUROPEAN WAR.

Information as to the naval and military operations of Australia during the recent war and particulars of enlistments and casualties were published in the Official Year Book of New South Wales 1920.

### REPATRIATION OF SOLDIERS AND SAILORS.

The Department of Repatriation has been created by the Commonwealth Government to conduct the work of re-establishing the returned soldiers and sailors in civil occupations. Legislation has been enacted in the State and Commonwealth Parliaments to facilitate this work. The State Acts include the Returned Soldiers' Settlement Acts, 1916, with amendments 1917, and 1919, and the Closer Settlement (Amendment) Act, 1919, which make special provision for the settlement of these men on the land; financial assistance may be granted to them, and training farms established. The Voluntary Workers (Soldiers' Holdings) Act, 1917, provides for Crown grants of land and for advances of money for the purpose of providing homes for disabled members of the Commonwealth Forces, or for the dependents of those who have died. The Returned Soldiers and Sailors Employment Act, 1919, gives preference in employment to returned soldiers and sailors in New South Wales, and provides for their reinstatement in positions held prior to enlistment. Information in regard to cottages built for returned soldiers is given in a later chapter of this Year Book.

Of the Commonwealth Acts, the Australian Soldiers' Repatriation Fund Act, 1916, provided for the administration of a fund raised by public subscription for assisting soldiers and sailors and their dependents; the Australian Soldiers' Repatriation Act, 1917-18, authorises the Repatriation Commission to make recommendations for regulating the granting of assistance and benefits to soldiers upon discharge, and to soldiers' dependents, and provides for the appointment of a State Repatriation Board for each State. Under the War Service Homes Acts, 1918-1920, assistance may be granted to enable Australian soldiers and sailors, munition workers and war workers and their female dependents to acquire homes.

The Australian Imperial Force Canteens Funds Act 1920, created a fund consisting of the surplus moneys of canteens, established in connection with the Australian Imperial Force, in the United Kingdom, France and Egypt, and on troopships, and of canteens established for the use of Garrison Institutes in Australia. The trustees of this Fund grant assistance and benefits to widows and orphans, widowed mothers, and other immediate dependents of deceased soldiers, and to seriously disabled soldiers.

Under the War Gratuity Acts, 1920, sailors and soldiers who served in the war, and embarked from Australia before 11th November, 1918, received a gratuity from the Commonwealth of 1s. 6d. per day for their service, the period in each case being calculated from the date of embarkation to the Declaration of Peace, 28th June, 1919. Sailors who did not serve in a sea-going ship, and soldiers who did not leave Australia, received 1s. per day.

## GEOGRAPHICAL SKETCH.

**N**EW SOUTH WALES is situated entirely in the temperate zone of the Southern Hemisphere, and is on the opposite side of the world from the seat of the Empire, at a distance of 11,200 miles from it by the Suez Canal—the shortest shipping route.

The name “New South Wales” was given to the eastern part of Australia (then known as New Holland) on its discovery by Captain Cook in 1770, and for sixty-one years all Australian territory east of longitude 135° east was known by that name. The western boundary was moved in 1831 to longitude 129°, and New South Wales was made thereby to embrace the whole continent, with the exception of the present territory of Western Australia. Thereafter the colony was reduced by three successive movements to its present dimensions, by the formation of South Australia in 1836, Victoria in 1851, and Queensland in 1859.

### BOUNDARIES AND DIMENSIONS.

The present boundaries of the State are as follow:—On the east, the coastline from Point Danger to Cape Howe; on the west, the 141st meridian of east longitude; on the north, the 29th parallel of south latitude, proceeding east to the Barwon River, and thereafter along the Macintyre and Dumaresq Rivers to the junction with Tenterfield Creek; thence along the crest of a spur of the great Dividing Range, the crest of that range north to the Macpherson Range, and along the crest of the Macpherson Range east to the sea; on the south, the southern bank of the Murray River to its source at the head of the River Indi, and thence by a direct marked line to Cape Howe.

From Point Danger, along a diagonal line, to the south-west corner of the State—a distance of 850 miles—the greatest dimension of the State is found. The length of coast, measured direct from Point Danger to Cape Howe, is 683 miles, the actual length of seaboard being 907 miles. The greatest breadth, that measured along the 29th parallel latitude, is 756 miles. The shortest dimension, that along the western boundary, is about 340 miles.

### AREA.

The total area of New South Wales, including Lord Howe Island, is 310,372 square miles, or 198,638,080 acres, being rather more than one-tenth of the area of the Commonwealth of Australia. Of this area 912 square miles at Canberra and 28 square miles at Jervis Bay have been ceded to the Federal Government. About 4,639 square miles, or 2,969,080 acres, of the total surface is covered by rivers and lakes.

The area of New South Wales in relation to the total area of the Commonwealth is shown in the following statement:—

State or Territory.	Area.	Per cent. of total area.
	sq. miles.	
New South Wales ... ..	309,460	10·40
Victoria ... ..	87,884	2·96
Queensland ... ..	670,500	22·54
South Australia ... ..	380,070	12·78
Western Australia ... ..	975,920	32·81
Tasmania ... ..	26,215	·88
Northern Territory ... ..	523,620	17·60
Federal Capital Territory ... ..	912	·03
Total Commonwealth ... ..	2,974,581	100·00

New South Wales is three and a half times as large as Victoria, nearly twelve times as large as Tasmania, and somewhat smaller than South Australia; Queensland is twice and Western Australia three times as large as New South Wales.

#### *Lord Howe Island.*

Lord Howe Island is a dependency of New South Wales, and is included in the electorate of Sydney; it is situated about 300 miles east of Port Macquarie, and 436 miles north-east of Sydney. The island was discovered in 1788; it is of volcanic origin, and Mount Gower, the highest point, reaches an altitude of 2,840 feet. The climate and soil are favourable to the growth of subtropical products; but on account of the rocky formation of the greater part of the surface of 3,220 acres, only about 300 acres are arable. The land has not been alienated, but is occupied rent free on sufferance, and is utilised mainly for the production of *Kentia* palm seed. A Board of Control at Sydney manages the affairs of the island and supervises the palm seed industry. At the Census of 1921 the population numbered 111 persons.

#### PHYSICAL FEATURES.

##### *Coastline.*

The coastline of New South Wales is remarkably regular, trending almost uniformly from north-north-east to south-south-west and displaying few striking topographical features. It consists of rugged cliffs, alternating with sandy beaches and numerous inlets, with here and there a river estuary. There are no islands of importance, no noteworthy promontories, and an entire absence of projecting river deltas. The central portion of the coast, however, is well furnished with spacious inlets, distinguished by winding foreshores and ample roadsteads, so that within a space of 150 miles there are as many as five natural harbours of note, some of which rank among the finest in the world, and only await economic development. Port Stephens, the most northerly, lies a little to the north of the central point of the coast; it possesses a great expanse of water exceeding 30 feet in depth. Broken Bay is a submerged river valley, with three arms and spacious anchorage, at the mouth of the Hawkesbury River. Port Jackson (Sydney Harbour), perhaps the finest harbour in the world, is the commercial centre of the State, and an important shipping port with a large volume of trade. Botany Bay is marred by shoals and the absence of high protecting foreshores; but it is spacious, and has an easily navigable entrance. Jervis Bay possesses deep water throughout its great extent, and is at present a naval base and destined to be the port of the Federal Capital at Canberra, with which it will be connected by rail. Further south, Twofold Bay, near the southern boundary, is a splendid harbour with a convenient entrance and spacious waterways. The coastal formation of Port Kembla and the estuary of the Hunter River have been converted, by considerable expenditure, into serviceable harbours for growing manufacturing centres. At frequent intervals along the coast numerous inlets provide shelter and facilities for coastal shipping.

The operations of important physiographical factors have prevented the coast from acquiring features such as projecting deltas and wide river valleys and estuaries, which so commonly give natural access to the interior of other countries. These factors are, the close proximity of the watershed to the coast, with consequent shortness and weakness of the rivers, and the presence of a constant though slow-moving southerly ocean current, which sweeps along the coast and prevents the formation of deltas beyond the line of protection afforded by headlands. In a number of instances the volume of the coastal rivers is not great enough to carry their silt far to sea,

with the result that, where they meet the dead water of the coast at their mouths, matter is deposited, forming a ground-work for "sand-bars," which constitute impediments to navigation even by coastal vessels.

Strewn along the coast at intervals lie eight lakes, partly marine and partly estuarine, connected with the sea by narrow channels, some of which are navigable and some of which are blocked for periods by sand and silt. It is believed that these lakes were formerly coastal valleys at a higher level than they at present occupy, and that they became "drowned" by the sea when the subsidence occurred which formed the existing harbours and the present coastal levels. Their entrances are usually narrow and shallow, and prone to be blocked by the action of the sea and wind upon the sand.

Most of these lakes are possessed of great beauty, and attract tourists and holiday-makers, while they provide extensive fishing grounds. The largest, Lake Macquarie, 8 miles south of Newcastle, is 44 square miles in area. A chain of lakes, of which the principal are the Myall and Wallis Lakes, lie between Port Stephens and Cape Hawke.

### *The Surface.*

The story of the manner in which the surface of New South Wales assumed its present shapes, as told by geologists, is very interesting.

In past ages a great part of the interior of Australia was occupied by a vast mediterranean sea, bounded by a line of highlands, which probably extended considerably to the east of the present coastline. The slope of these was towards the west, and rivers flowed down from them into the inland sea, carrying thither the sand and silt which now seals down the artesian basin. In a later age a gradual uplift took place in the northern part of Australia, accompanied by a depression in the southern portion; and streams which formerly flowed north-west and entered the sea by separate mouths became diverted to the south and conjoined with the Darling River.

The southern depression allowed the sea to encroach inland from the south and to spread over the region now known as the Riverina, but a subsequent uplift pushed the southern sea back to its present boundary and produced a combination of the western rivers into one great system—the Murray-Darling.

During the upward movement in the interior a marked elevation took place in the coastal portion, the uplift being greater towards the coast, and an elevated plateau with a short steep slope to the eastern seaboard was produced. Rivers which then commenced to flow down this slope evidently possessed great erosive power, and, by a very gradual process of denudation, worked their way inland extending the coastal district into what were formerly the eastern portions of the Great Dividing Range.

Subsequently a submergence of the coast took place and the valleys of the coastal rivers were converted into harbours, such as Port Jackson, Broken Bay, and Port Stephens.

To-day the surface of New South Wales bears signs of having passed through lengthy periods of erosion. It possesses less diversity than any of the continents, and there are no lofty mountain ranges, few peaks of importance, and no large lakes. Nearly the whole of the State consists of extensive plains and hilly patches at varying levels. Yet the surface is divided naturally into three main divisions—the Coast District, the Tablelands, and the Plains. The tablelands form the Great Dividing Range, which traverses the State from north to south; and marks the division between the coast district and the plains.



The coastal strip is undulating and well watered. The average width is about 50 miles in the north and 20 miles in the south; at Clifton the tableland abuts on the ocean, while the widest part (150 miles) is in the valley of the Hunter River, where the relatively soft rocks of the coal basin have offered least obstruction to river erosion.

The coastal region is bounded on the west by steep, often inaccessible, escarpments, where the highlands descend suddenly to the lower levels of the coast; these declivities are furrowed by deep and rugged valleys sloping toward the sea, and here and there a mountain spur projects eastward. These natural features render the country almost impassable from north to south, and have made access to the tablelands from the coast a matter of formidable difficulty, so that the highlands are crossed at only three points by the railway and at but few more by roads.

The coast line is fringed with a narrow and fertile plain extending from north to south and broken only at Clifton. This plain juts along the Hunter Valley for a distance of 60 miles. A considerable strip north and south of the Clarence River is 30 to 40 miles wide, thence south to Port Stephens it is narrow, 10 to 15 miles in width; thereafter it gradually broadens until it ends at Clifton with a width of 35 miles. The South Coast continuation of this plain is never wider than 15 miles, the average being about 10 miles.

There are two tablelands—the northern and southern—comprising an extensive plateau region, divided near the middle by the Cassilis or Hunter Geocol or Gap. Generally they present on the eastern side a steep descent towards the ocean, while on the west they slope gradually towards the plains. They vary in width from 30 to 100 miles. The northern tableland commences in Queensland and terminates on the northern side of the Peel River Valley; its average height is 2,500 feet. The southern tableland extends from the Victorian border, and slopes gradually to the Cudgong and Colo Rivers; its average height is slightly less than the northern tableland, although the Kosciusko Plateau, the most elevated portion of the State, is within its limits.

At various levels gently undulating upland plains occur throughout the tableland division, such as the Dorrigo, which forms the elevated hinterland of the coastal tract around Coff's Harbour; and the Bathurst, Goulburn, Yass, and Monaro Plains on the central and southern tablelands. Notable features of the southern tableland are the limestone belt, in which the famous Jenolan and other limestone caves occur, and the numerous sunken valleys, such as those of the Blue Mountains, the Burragorang Valley, through which the Wollondilly River flows, the Kangaroo Valley, between Moss Vale and the Shoalhaven River, and the Araluen Valley further south.

The Great Plain district stretches from the base of the slopes from the tablelands to the western boundary of the State. The plains are not quite level, but rise very gently from the bed of the Darling eastward towards the Great Dividing Range and westward towards the South Australian border. Only a few trifling elevations occur, and the plains are in large part devoid of timber.

The plains are watered by the rivers of the Murray-Darling system; the Darling and its tributaries are liable to considerable shrinkage in periods of dry weather; but, on the other hand, in wet seasons, these streams overflow their banks and flood the surrounding country for miles, producing a luxuriant growth of grasses.

The surface of the plains consists of fertile red and black soils, the former being particularly rich in plant food. The black soil formations represent

the silted-up channels of old rivers which, when flooded, spread a fertile silt over the surrounding district. The black soil plains occupy large areas along the middle courses of the Macquarie, Castlereagh, Namoi, and Gwydir Rivers.

Several portions of the plains are distinguished by special names, such as the Liverpool Plains, between the Peel and Liverpool Ranges; the Riverina, stretching northward from the Murray and intersected by a network of streams; the Bulloo Plain, between the Paroo River and the Grey and Barrier Ranges; the Bland, between Cootamundra and Lake Cowal; and the Pilliga Scrub, between Narrabri and Coonabarabran.

### *Mountains.*

The mountains of New South Wales may be classified in two main groups—the Great Dividing Range, with its coastal spurs, and the ranges of the interior.

The Great Dividing Range is the name given to a continuous chain of highlands stretching along the whole eastern portion of Australia. In a strict acceptance of the term the portion within New South Wales is not a range of mountains, but a succession of extensive plateaux. Except for a westerly bend skirting the valley of the Hunter River, it runs for the most part parallel to the coast-line, and a number of lateral spurs branch off from either side.

Proceeding from north to south, the names distinguishing the various portions of the Great Dividing Range in New South Wales are:—Macpherson, New England, Liverpool, Main or Blue Mountain, Cullarin, Gourock, Monaro, and the Muniong Ranges.

The Northern Tableland, comprising principally the highlands known as the New England Range, is the largest positive physical feature of the State. It has a considerable area at a greater altitude than 4,000 feet, and its highest point, Ben Lomond, is 5,000 feet above sea level. The highest parts of the Great Dividing Range are situated in the extreme south and are known as the Muniong Range. Several peaks attain an altitude of about 7,000 feet, the highest of all being Mount Kosciusko (7,328 feet).

The remaining mountains of the State, representing the remnants of ancient ranges, possess little importance.

The Warrumbungle Range is practically a continuation of the Liverpool, extending in a north-easterly direction. These mountains represent the denuded stumps of a series of volcanoes, which burst into activity near the shores of the old inland sea before it became silted up. The sandstone beds of the Warrumbungle Range form part of the intake beds of the great artesian basin.

Two ranges—the Barrier and Grey—of an average elevation of about 1,500 feet, and rising 800 feet above the surrounding plains, lie near the extreme west and north-west of the State. They form the western boundary of the vast depression through which the Darling River and its tributaries flow. The Barrier Range contains some of the richest silver-lead deposits in the world, and some of its rocks are possibly the oldest in Australia, if not in the world.

### *Rivers.*

New South Wales does not possess any great rivers, and for this there are three main causes—the position of the watershed; the absence of lofty peaks, whose snowy caps in melting might feed large streams; and the spasmodic, and unreliable nature of the rainfall in the western interior.

The Great Dividing Range, which constitutes the main watershed, has formed an absolute boundary between two river groups—the eastern or coastal, and the western—which are entirely distinct and possess very dissimilar characteristics.

The coastal rivers flow east into the Pacific Ocean, and, on account of the proximity of the mountains to the ocean, the majority are short, rapid, independent streams; the Hunter and the Hawkesbury by reason of their winding courses are the longest. Generally, the rivers south of Sydney, where the coastal strip narrows considerably, are of less importance than those of the north.

The physical aspects of all the eastern rivers are similar. Their upper courses are amidst broken and mountainous country, and the lower basins consist of undulating land with rich alluvial flats; where uncultivated, the land is densely timbered.

There are eight principal coastal rivers and numerous minor streams, many of which are navigable for various distances. Ocean-going vessels may proceed along the Richmond for 65 miles, the Clarence 45 miles, the Macleay and Manning 30 miles, and the Hunter 35 miles. Ocean-going vessels do not penetrate the Hawkesbury, and the Shoalhaven is navigable for only 5 miles from its mouth.

The rivers of the western slope belong to one great system—the Murray-Darling, which is the only great river system of Australia. They drain an immense area, including the whole of the western portion of New South Wales and large portions of Queensland and Victoria, and discharge into the sea through a single mouth. In consequence of the gradual slope of the plain country, these rivers, unlike the coastal, are long, meandering, and slow in discharge. They wind for the most part through loose absorbent soils in which they have usually cut deep channels which at times are full of heavily-charged, fast-moving water of which they relieve their upper basins after heavy rains. On such occasions these streams are impressive rivers. The Gwydir, Namoi, Castlereagh, Macquarie, and Bogan discharge their water into the Darling, which in turn carries it to the Murray, which also receives the waters of the Lachlan and Murrumbidgee. Normally these western rivers have not great volume of flow and consist of a sluggish, shallow, clear stream flowing at the bottom of a channel as much as 30 feet below the ground level. Sometimes, in dry seasons, the flow ceases and there remains of the river nothing but a chain of water-holes. These curious variations in the condition of the western streams are due to the following causes—the variableness of the rainfall at their sources, the small rainfall in their lower basins, the absence of considerable feeding streams, the great evaporation, and the absorbent nature of the soils particularly over the artesian basin.

The most important river is the Murray, which forms part of the southern boundary of the State. It has a total length of 1,600 miles, of which 1,200 are within New South Wales, and along this course a more or less regular stream flows, fed by the snows of the southern highlands. For about seven months of the year the river is navigable as far as Wentworth for large river-boats, and for smaller craft as far as Albury. The Murrumbidgee, 1,050 miles in length, ranks next to the Murray in regularity and volume of flow. In its lower course it receives the Lachlan, 850 miles in length. Longest of all the rivers of Australia is the Darling, which, from its source to the sea, measures 2,310 miles. It flows across western New South Wales from north-east to south-west and receives a number of rivers from South Queensland when their volume is sufficiently great, and in New South Wales receives successively the Gwydir, Namoi, Macquarie and Castlereagh, and Bogan.

*Lakes.*

The lakes of New South Wales may be classified in five groups:—The coastal lakes or lagoons, those of the tablelands, and of the Western Plains, the lakes and tarns of the Kosciusko Plateau, and the great artificial lake at Burrinjuck used for irrigation purposes.

The coastal lakes have been already described.

The lakes of the Tableland owe their origin to volcanic and other geological disturbances of former ages, and are nearly all situated in the southern tableland. The largest is Lake George, which occupies a depression in the Cullarin Range; it is fed by several small streams, but has no visible outlet, its waters being lost by evaporation and by soakage through the slate formation of its bed. When full, Lake George covers an area of 60 square miles, but in average seasons a large proportion of its bed is dry and is utilised for grazing stock. Lake Bathurst lies 10 miles east of Lake George. Both these lakes are situated more than 2,000 feet above sea level.

The lakes of the Western Plains occur usually along the courses of the western rivers; they are natural depressions which are filled during floods by the overflow of the rivers. Like the western rivers these lakes vary with the rainfall, presenting an impressive appearance in wet seasons, and dwindling to a succession of ponds and mud basins in continued dry weather; but they serve a useful purpose in dry seasons by maintaining the flow of the rivers below the lakes for some months after the upper courses become dry.

Along the Darling River the largest lakes on the right bank are:—Narran, above Brewarrina; Cawndilla, Menindie, and Tandon, near Menindie; and, on the left bank, Gonyulka in the Wilcannia district.

Within the Lachlan basin the most important are Lake Cowal, which is situated about 40 miles from Forbes, and receives the drainage of the Bland Plain; and Lake Cudgellico in which the floodwaters of the Lachlan are conserved.

Lake Victoria, on the right bank of the Murray River, in the south-western corner of New South Wales, is connected with the Murray by the Rufus River, covers an area of 26,000 acres, and holds 17,000,000 cubic feet of water when full.

The Kosciusko Lakes are due to the formation of barriers of moraine material left behind by glaciers. They are situated about 6,000 feet above sea-level. The principal are the Blue Lake, Lake Albina, Cootapatamba and Club Lakes, and Hedley Tarn.

The Burrinjuck Dam, near the head of the Murrumbidgee River, is a large lake covering 12,740 acres and containing when full 33,612,000,000 cubic feet of water impounded by a retaining wall 240 feet in height. Its outlet is by the Murrumbidgee River, whose flow is thereby regulated to meet the needs of an extensive irrigation area on its bank 240 miles below the dam.

*Mineral Springs.*

Mineral springs of varied composition are found in many parts of the State; in some cases the waters have been marketed as table-waters, and some are of medicinal value. Such springs occur at Mittagong, Ballimore, Rock Flat, Bungonia, Jarvisville, and Yarrangobilly.

## ECONOMIC CONDITION.

In contrast with many older countries where the distribution of settlement has been affected by considerations of defence, settlement in New South Wales has been determined almost exclusively by economic factors. The principal among these is the distribution of industrial activity into pastoral, agricultural, dairying, mining, and manufacturing localities, and along lines of traffic.

The pastoral industry caused the original spread of settlement over the State and is still maintained in practically every part of it, though its importance diminishes from that of sole industry in the west to a secondary position in the central and eastern divisions where agriculture and dairying are assuming increasing importance. From its nature it requires extensive areas and little labour, and promotes settlement of a scattered nature characterised by small towns, which become smaller and more scattered toward the western boundary where ultimately only isolated sheep stations exist.

Superimposed on the pastoral foundation in the central division of the State a belt of agricultural settlement stretches from the northern to the southern boundary between the Great Dividing Range and a line to the west, which follows generally the line of 20-inch rainfall in the south, and the 25-inch line in the north. This extensive belt is roughly wedge-shaped, and diminishes from a breadth of about 200 miles in the extreme south to about 100 miles in the north. Practically the whole of the wheat crops of the State are produced here, but only a small portion of the suitable lands have been utilised for agriculture, and pastoral pursuits are still carried on extensively. Settlement here is closer than in the west, and a number of flourishing towns with populations ranging from 2,000 to 10,000 exist.

East of the Dividing Range, in the coastal district, dairying is the staple industry, but there is also a certain amount of miscellaneous agriculture in the more fertile portions, and some cattle grazing in the more rugged and less accessible districts. Population in the coastal districts is denser than in any other region of the State as the farms are usually small and intensely cultivated.

Mining has always exerted, and probably always will exert, considerable influence in determining settlement in New South Wales. Newcastle was founded in order to work the coal measures soon after the settlement of the colony, and the gold discoveries of the fifties, gave the first effective impetus to permanent settlement in the interior. To-day the most populous portions of the State, outside of the metropolitan area, are situated in the mineral fields, chiefly in the flourishing coal-mining districts of Newcastle, Maitland, Lithgow, and Wollongong; the silver-lead fields of Broken Hill; and the now languishing copper-mining township of Cobar. There are some thirty settlements of various sizes supported by exploitation of the coal fields, and about fifty scattered townships dependent on other mining pursuits, the most important of which are the limestone and other quarries of Portland and Kandos, whence most of the State's supplies of cement are now derived. Manufacturing pursuits are beginning to assume importance in New South Wales apart from their position as adjuncts of the primary industries, and now support a considerable proportion of the industrial population of the metropolis, as well as some rapidly-growing industrial centres in proximity to the coal supplies at Newcastle, Lithgow, and Wollongong.

The following table provides an instructive dissection of the State according to natural divisions, showing the rainfall, population, area, and production of each; a map showing these divisions is published as a frontispiece :—

Division.	Average Annual Rainfall.	Population at Census, 1921.	Total Area.	Production of—				
				Wool, 1919-20.	Wheat (average), 1917-21.	Butter (average), 1917-20.	Minerals, 1919-20.	Manufactures, 1919-20.
	inches.	000	acres. 000	lb. 000	bushels. 000	lb. 000	£ 000	£ 000
<i>Coastal—</i>								
North Coast ...	38-63	124	5,410	33	...	40,547	3	*
Hunter and Manning ...	24-60	245	10,391	6,135	35	14,259	5,966	3,618
Cumberland ...	31-48	1,060	1,070	93	...	754	577	30,927
South Coast ...	27-56	89	5,484	1,243	1	8,615	1,138	560
Total ...	...	1,518	22,355	7,504	36	64,175	7,684	35,105
<i>Tablelands—</i>								
Northern ...	30-32	55	8,928	16,236	55	1,470	416	4,209
Central ...	24-37	123	8,989	17,348	900	1,080	2,489	
Southern ...	19-32	46	7,914	21,470	133	973	32	
Total ...	...	224	25,831	55,054	1,088	3,523	2,937	
<i>Western Slopes—</i>								
North ...	24-31	48	9,813	26,579	2,701	1,038	67	4,209
Central ...	20-29	54	6,253	16,129	4,824	439	3	
South ...	20-28	78	8,186	28,454	5,414	1,779	88	
Total ...	...	180	24,252	71,162	12,939	3,256	158	
<i>Plains—</i>								
North ...	19-23	27	10,031	24,040	133	37	...	4,209
Central ...	16-22	28	16,030	37,543	4,034	152	40	
Riverina ...	14-20	76	19,767	56,398	11,907	1,075	67	
Total ...	...	131	45,828	117,981	16,074	1,264	107	
<i>Western Plains ...</i>	9-16	48	80,368	44,940	11	26	525	
Whole State ...	...	2,101	198,634	296,641	30,148	72,244	11,411	39,314

\* Included with remainder of State.

The value of production of manufacturing industries in the divisions other than those shown is not available. The total value in those divisions—namely, £4,209,000—shows, however, that the manufactories are not extensive; they are devoted chiefly to making food and drink products.

The five principal divisions are strips of territory running from the northern to the southern boundary in a north-westerly direction, and, except for the Western Plains, each is divided into three portions—northern, central, and southern—whereby fourteen subdivisions are secured which present fairly uniform natural features and which are controlled by similar physiographic factors. In the north the region of high average rainfall extends further inland than in the south, with the result that the isohyets run in a general north and south direction. The south-western extremity of the

Riverina lies about 100 miles further from the coast than does the north-western extremity of the northern plain and, since the average annual rainfall diminishes with increasing rapidity towards the west, the northern subdivisions shown above generally receive somewhat more rain than the central, and the central more than the southern subdivisions. Rather less than one-half of the total area of the State receives annual average rains exceeding 20 inches, and rather more than one-half receives more than 15 inches per year.

Not only the quantity, but the period and reliableness of the rainfall, and the amount of evaporation are important considerations in determining the productive possibilities of any region. In common with most countries, New South Wales suffers periodically in one part or another from the effects of intermittent rainfall, a disability which local conditions such as the abnormal evaporation and the absorbent nature of the soils of the interior tend to aggravate. This considerable difficulty may ultimately be overcome by water conservation and improvement in cultural methods, but at present it operates powerfully to the detriment of the western hinterland.

Three clearly defined seasonable rain-belts cut diagonally across the State from west to east with a southerly incline. A winter rain region, which includes the southern portion of the Western Plains and about two-thirds of the Riverina, is bounded on the north by a direct line from Broken Hill to Wagga with a curve around Albury. A summer rain region, including the whole of the northern subdivisions, is bounded on the south by a line which waves regularly, first south and then north of a direct line from the north-western corner of the State to Newcastle; and between these there extends a region, including the central and south-eastern portions of the State, which enjoys rains of a non-seasonal character; between Nowra and Broken Bay a narrow coastal strip receives most of its rain in the autumn.

These pluvial circumstances exert a decisive effect on the nature of the pursuits followed and the extent of settlement in the various regions of the State, and explain their industrial characters.

#### *Coastal Districts.*

Thus the North Coast district, enjoying the greatest rainfall and embracing a considerable area of fertile coastal plain, is the most productive portion of the State, and, omitting the mining and metropolitan districts, is the most thickly peopled. It is a comparatively well developed, favourably situated, and highly prosperous division, watered by a number of streams, which flow through fertile valleys and, in the absence of natural harbours, give access to the ocean. It is traversed by a railway which, on completion, will afford connection with the other lines of the State. The steep descent of the rivers from the highlands provides vast reserves of motive power yet untapped. The staple industries of the district are dairying and cattle grazing; indeed, it produces more butter than the whole of the remainder of the State and raises more cattle for slaughtering than any other division. For these purposes its undulating coastal hills and more rugged westerly foothills are admirably adapted, but sheep-raising is entirely neglected. The climate is too humid to favour the cultivation of wheat, but in the fertile soils of the valleys and the coast, agriculture has assumed some importance, and these are the principal maize-growing localities of the State. Many minor crops are cultivated with excellent results, notably sugar-cane. Where the country has not been cleared, much of it is thickly wooded with valuable trees, and timber-getting is an important industry. This prosperous region is characterised by close settlement, but it is not yet nearly fully developed. It possesses about sixteen persons to the square mile and numerous



thriving townships. Its largest towns are Lismore, with a population of 8,600; Grafton, 6,000; Kempsey, 3,600; Casino, 3,500; Murwillumbah, 2,900; and Ballina, 2,800. Byron Bay and Coff's Harbour are the principal shipping ports of the district.

The Hunter and Manning division constitutes a unique area among the coastal districts and embraces more diverse physical features than any other. It contains the most valuable portion of the great coal-basin underlying the Hunter River valley. Being that portion of the coast which is opposite the only real gap in the Great Dividing Range, it forms the most natural outlet for the produce of the interior and is the central district of the State. A westerly trend in the mountains has left on either bank of the Hunter River the broadest region of the coastal districts.

On the whole the division is not so well watered as the North Coast, and it contains more rugged country. A strip bordering the coast between Trial Bay and Port Stephens continues the features and industries of the North Coast, relying principally on dairying and cattle-raising for the maintenance of its prosperity. Further inland cattle-grazing and, to some extent, sheep-grazing, are the main pursuits. A wide belt in the Hunter River valley is very productive in agriculture and dairying, with cattle and sheep grazing in the more remote parts. The district is traversed by railways north, south, and west of Newcastle, which is its only coastal outlet. Farming occupations support about one-half of the population, or 120,000 persons, who live principally near the coast and along the Hunter River Valley, where settlements are numerous. The prevalence of grazing inland renders population sparse. The principal non-mining towns and their populations are Maitland 12,000, Singleton 3,300, and Muswellbrook 2,000. The division ranks next in importance to the North Coast in production of butter, maize, and cattle; fodder crops such as lucerne are grown extensively, and considerable areas are covered by vineyards.

In the centre of the district the most valuable parts of the coal deposits of the State are mined, and this occupation provides sustenance for the other half of the population of the division. The estuary of the Hunter River, on which the flourishing city of Newcastle is situated, has been developed by considerable expenditure into a serviceable harbour for coal shipment, where oversea vessels call to load butter, meat, and other produce. On its shores growing metal-manufactories are now established. The largest mining centres are Newcastle, with 84,400 inhabitants; Cessnock; Kurri Kurri; West Wallsend, 4,200; Abermain, 3,000; and Weston, 2,800.

The County of Cumberland centres on Port Jackson, and contains a small area encircling the city and its environs. It includes the oldest settled parts of the State, and its pursuits are dominated by the demands of the large consuming population which it contains. Fruit-growing, poultry-farming, and dairy-farming for the supply of milk are the principal rural industries, and from them the metropolitan market draws a large part of its supplies. The population of the city proper is 111,000, but it has extensive and widely distributed suburban areas, which make its total population 906,000, or three-sevenths of the inhabitants of the State. In addition, for a distance of 20 miles along the railways, which radiate from it, there are important residential towns closely dependent on the metropolis, with which frequent passenger train services are maintained. Sydney is the political and economic centre and it conducts a very large part of the professional, political, commercial, and manufacturing business of the State. It is the terminus of all the principal railways, the centre of wool, wheat, cattle, and sheep sales, the shipping port, contains the terminal wheat-elevator, the principal ship-building yards, the cattle slaughtering and meat-freezing works,

and most of the principal manufactories, whose work is valued at £30,000,000 annually; in addition it handles practically the whole of the oversea trade, amounting to nearly £100,000,000 per year.

The largest independent settlements in the district and the populations are Parramatta, 14,600, a residential and fruit-growing centre; Liverpool, 6,300; Windsor, 3,800; Penrith, 3,600; Campbelltown, 2,300; and Richmond, 2,000.

The South Coast district shows less rural development than any other portion of the coastal belt, and its prosperity is less buoyant than that of the North Coast. Its rural industries support a population of 60,000, which is but half that of the North Coast on an equal area. While its pursuits are substantially the same it lacks extensive arable lands and it has fewer natural advantages. The steep slopes of the Great Dividing Range hedge in the coastal plain nearer the sea and deny it the benefits of large rivers, so that it lacks extensive valleys and river flats. Its northern end is served by railways, but its southern portion, comprising two-thirds of its area, lacks transport facilities, and communication is difficult, depending on private steamships and less serviceable motor transport. Hence dairy-farming is restricted to the accessible areas and is on a far smaller scale than on the North Coast. Butter is not so generally made, although it is manufactured in large quantities. Considerable attention is given to cheese, and the South Coast produces the greater part of the State's output. Though dairy-farming is limited, cattle-grazing is not conducted so extensively as in the north, but it is the only other industry of importance, for there is comparatively little agriculture beyond a few crops of maize. The more northerly localities, such as Camden, are among the oldest settled parts outside the County of Cumberland, and were the original centre of the merino sheep flocks. Sheep are still grazed there, but their numbers are now relatively unimportant. This district, being readily accessible from the city, supplies the metropolitan market with large quantities of produce, especially milk, and has become a favourite resort for country residences for city dwellers.

Around Wollongong, on the coast, the southern outcrop of the great coal measures are mined. The fields are not so extensive as those of the north, but they maintain a population of about 30,000. The development of manufactories so far has been small, but large ore-smelting works have been established at Port Kembla, where oversea shipping facilities exist, and considerable progress is being made.

The largest mining towns are Wollongong, 6,700; Bulli-Woonona; Corrimal; and Helensburgh. The non-mining towns are not of outstanding importance. Bowral, the largest, has 2,600 inhabitants; Berry, 2,300; Nowra, 2,200; Camden, 2,000; Moss Vale, 2,000; and Kiama, 2,000. Settlement is greatest in the northern localities, where transport facilities are good and where the mountains are farthest from the sea. South of Nowra, the present railway terminus, only one settlement of note exists—Bega, with a population of 2,000.

#### *Tablelands.*

Most of the rugged portions of the State are contained in the tableland divisions and, though extensive plateaux exist, considerable areas are rock-strewn and not adaptable to agriculture. Hence grazing has remained the staple industry, although many farmers combine agriculture with grazing, and large areas are cultivated in suitable localities. The rainfall is ample throughout and the headwaters of most of the principal rivers make this a well-watered region. Railway communications are good, but, on the

whole, settlement is sparse, fewer flourishing towns exist than on the coast, and small settlements are rarer because lands suitable for intense farming are more scattered. Neither dairying nor agriculture has been developed.

The Northern Tableland embraces the districts of highest average elevation in the State, and includes a considerable area on the coastal side of the Dividing Range. Here cattle-grazing is very extensive and large numbers of sheep are depastured but very little butter is made, and cultivation is restricted to small areas of wheat and maize. Its production of wool is important, and its cattle stations are next in importance to those of the North Coast and the Hunter and Manning. Relatively its population is only about one-quarter as great as that of the North Coast, but sparse settlement is characteristic of all pastoral regions. In the whole area there are only ten towns of importance, of which Armidale, 5,400; Glen Innes, 5,000; Inverell, 4,400; Tenterfield, 2,500; and Tingha, 2,000, are noteworthy. Extensive deposits of tin underlie the greater part of the division, and tin-mining is carried on at Tingha and Emmaville.

The Central Tableland includes the first settled portions of the interior and contains some of the largest inland towns; it presents an appearance of general prosperity, and supports a population twice as great as the Northern Tableland. Sheep-grazing is the principal pursuit, and agriculture, particularly wheat-growing, is important. Cattle are not generally distributed and there is little dairying, but miscellaneous farming, including the growing of maize, potatoes, and oats is important. The largest towns dependent on farming industries are Bathurst, 9,500; Orange, 7,400; Cowra, 3,700; and Mudgee, 3,200; while on the Blue Mountains, amidst splendid scenery, two large residential towns have grown up within easy access of Sydney—Katoomba, with 9,000 inhabitants; and Blackheath, 2,200. Formerly gold-mining was of considerable importance in this division, but it is now carried on at only a few struggling settlements. Mining in other directions has caused considerable development at Lithgow, where the western outcrop of the coal measures are worked, supporting a population of about 15,000, and rendering possible the establishment of iron and steel works and a small-arms factory in the neighbourhood. Large quarries supply materials for the manufacture of the State's supply of lime and cement at Portland and Kandos, whose populations are approximately 3,000 and 1,200 respectively.

The Southern Tableland contains comparatively little arable land, and is used almost exclusively for sheep-grazing, whence it contributes an important quota to the wool clip of the State. Few cattle are depastured, and for the most part settlement is scanty as on the Northern Tableland. The only towns of importance are Goulburn, 12,700, and Yass, 2,500.

#### *Western Slopes.*

The divisions of the Western Slopes contain gently undulating lands with a westerly trend watered by the upper courses of the inland rivers, and an adequate and regular rainfall. These fertile areas are eminently suitable for agriculture and are the most productive portions of the interior. As yet they are only sparsely settled and very great development is possible.

The North-Western Slopes are situated nearer the coast than the other slopes and receive appreciably more rain. They stretch from the Queensland border to the Warrumbungle Mountains, and include the Liverpool Plains and the upper portions of the Gwydir and Namoi Rivers with their tributaries. Practically the whole of the agriculture of the northern parts of the State is conducted in this division, which grows extensive wheat-crops with a certain amount of maize, usually in rotation. The division, however, is predominantly pastoral; its cattle herds are of some importance, and it

produces large quantities of wool and about one-tenth of the wheat of the State. Wide scope for development still exists. Its population is only about three persons per square mile, and, with the exception of the flourishing towns of Tamworth, which has 7,300 inhabitants, Gunnedah, 2,700, and Quirindi, 2,300, it has no important centres of population.

The Central-Western Slopes cover a narrow strip of splendid agricultural lands where most of the farmers cultivate portions of their holdings and depasture sheep on the remainder. The land receives regular rainfall and has good railway facilities which are continually being extended. Mixed farming—sheep and wheat—is here the characteristic pursuit, and, relatively speaking, it is the greatest wheat-producing division; one-twelfth of its area is cultivated, but it is only one-third of the size of the Riverina, the most important wheat district. Its sheep flocks are numerous and produce considerable quantities of wool. Few cattle are depastured and dairying is of no importance. Settlement is not close, but a number of important towns are located here. Most important are Dubbo with a population of 5,000; Forbes, 4,400; Parkes, 3,900; and Wellington, 3,900. This division contains one-thirtieth of the area of the State and produces nearly one-sixth of the wheat-crop and one-twentieth of the wool-clip.

The South-Western Slopes are another rich area of well-watered, well-connected, and rapidly developing country eminently adaptable to cultivation and capable of carrying a far greater population than it at present holds—about six persons per square mile. At present only one-thirteenth part of its area is under cultivation, and the farmer generally depends on sheep to assure his position when wheat-crops fail, so that grazing is an extensive industry supplementary to wheat-growing. It does not possess large cattle herds, but produces an important quantity of butter. Its sheep are numerous and it produces one-tenth of the wool and rather more than one-sixth of the wheat of the State. Oats are an important secondary crop in this region. The townships are numerous and generally flourishing, and the number of important centres is increasing steadily. The principal towns are Albury with 7,700 inhabitants; Wagga Wagga, 7,700; Junee, 3,600; Cootamundra, 3,500; Young, 3,300; Murrumburrah, 3,000; and Temora, 3,000. It is one of the most rapidly developing portions of the State.

#### *Plains and Riverina.*

The Plains and Riverina division consist of the eastern portion of a remarkable extent of almost level country, which stretches from the last hills of the Western Slopes to the western boundary of the State. The Plains and Riverina are an easterly strip of the great plain and are of an average width of 120 miles. They comprise the great sheep districts of the State and about one-half of the agricultural lands. Generally speaking, they are not well watered, the average rainfall is low, and its intermittency is a source of frequent loss. They are traversed by the western rivers in their lower courses, but their flow is irregular and, on account of their fewness, they do not supply water to a very extensive area. Railway facilities are not so good as in the more easterly districts, and communication and transport depend most on private motor conveyances, and horse-drawn coaches and waggons. Artesian water underlies a considerable area on the north, and bores serve to supply permanent water in a number of localities; in the south, sub-artesian bores are of great practical utility.

The Northern Plains possess generally the same physical characteristics as those further south, but are almost without a vestige of agriculture, and this is probably due to the fact that the greater part of the rain falls in the summer months, after wheat-crops have been harvested. Cattle-grazing

is of little practical importance and the district is almost entirely devoted to sheep. Fewer stock per acre are carried here, and in the plains generally, than elsewhere because of the frequent dry seasons and the absence of permanent supplies of fodder and water. Settlement is widely scattered, and the density of population is little more than one person per square mile; there are few towns and most of them are small. The only important centres are Moree with a population of 3,000, and Narrabri, 2,400. The district produces a very valuable wool-clip.

The extensive Central Plains division contains a wide expanse of territory and its pursuits are accordingly diversified. Its rainfall is of a non-seasonal character and is good on the east, where there are important wheat areas among the sheep stations. Toward the west, as rainfall and railway facilities diminish, the only industry is sheep-raising. The division contains one-twelfth of the area of the State and produces about one-eighth of the wool-clip and one-seventh of the wheat-crop, and is highly productive. It does not, however, maintain a large population; many large estates exist, and there is comparatively little settlement, the population being less than one person per square mile. The only large towns are Coonamble, 2,200, and Gilgandra.

The southern portion of the plains is known as the Riverina on account of the many waterways. It contains the largest and most serviceable of the western rivers. Its soils are fertile and eminently adaptable to agriculture, and, though the rainfall is generally less than in other divisions, the greater part falls during the winter and spring, when wheat-sowing and growth take place, so that bountiful harvests are produced. For this reason the locality has become the most important wheat-growing centre of the State and the scene of the greatest general development in recent years. Wheat-growing, frequently in conjunction with sheep-grazing, is the principal activity, but farms used for wheat only and sheep only are numerous. One-half of the district at present contains important wheat areas, and these are extending as railway facilities improve. In the centre of the Riverina, on the north bank of the Murrumbidgee River, a large and growing irrigation area has been established. It contains more than 1,000 farms devoted to dairying, fruit-growing, and agricultural production. The easterly part of the Riverina is closely settled and contains many prosperous townships; in the westerly portion settlement is sparse, but the population is on the average about four persons per square mile. The principal towns are Narrandera with 3,000 inhabitants; Deniliquin, 2,700; Hay, 2,600; and Corowa, 2,400.

#### *Western Plains.*

It would appear that the Western Plains, one-third of which receives less than 10 inches of rain per year and the remainder less than 15 inches, will never be developed into a productive region maintaining a population commensurate with its area. While the soils are uniformly fertile, the lack of rain, permanent water and grasses, and the high rate of evaporation, ranging up to 90 inches per year, render it unproductive in a high degree. There is scarcely a sign of agriculture or dairying, and its capacity for carrying sheep is only about one-fifth as great as that of the plains further east; but it produces high-grade merinos. It is a lonely region for the most part occupied in large-holdings on a long lease tenure. It presents an immense field for scientific development, but its possibilities are problematical. Whether irrigation from the Murray and the vast lake-reservoirs of the South Darling, or in the artesian water zone of the north, combined with some great advance in dry-farming methods will render any extensive areas

adaptable to agriculture, or whether water and fodder conservation will render it capable of depasturing large numbers of sheep and suitable for closer settlement, remain questions which are not likely to arise seriously until the more attractive easterly regions have made very great advances in settlement. It is contended, however, that in the south there are large areas which only require railway facilities to render them profitable for agriculture. At present, excluding the mining districts, it is a vast region comprising two-fifths of the area of the State, producing less than one-seventh of the pastoral produce, but practically nothing besides, and supporting only 21,000 persons (one person to 6 square miles) or one-hundredth part of the population. Near the western boundary, however, is situated one of the richest silver-lead fields of the world, which supports, in the large mining town of Broken Hill, a population of 26,000 persons. In the eastern part of the division exist extensive copper deposits, which formerly maintained thriving settlements at Cobar, Canbelego, and Nymagee. For the rest the division possesses only one town, Bourke, with a population exceeding 1,000, five exceeding 500, and about twenty smaller townships.

#### TRANSPORT AND COMMUNICATION.

The problem of establishing an efficient system of transport in New South Wales is rendered difficult by several causes—the existence of a belt of rugged highlands comparatively near the coast, passable without difficulty at only one or two points; the consequent difficulty in connecting the coast with the interior; the absence of navigable rivers and waterways and the scattered nature of the settlement, for, excluding the metropolitan area, 1,200,000 inhabitants are distributed over more than 300,000 square miles, an average of only four persons per square mile.

In the early years of the existence of the colony the rugged approaches to the Great Dividing Range defied the efforts of explorers year after year, and successive expeditions were lost in the great blind valleys which lead from the coastal plains into the heart of the hills and there terminate in inaccessible cliffs. For nearly twenty years explorers tried in vain to discover what lay beyond these defiant mountains, and, at last, the expedition of 1813 succeeded by ignoring the natural lines of progress—the valleys—and proceeding along the crests.

Settlement promptly took advantage of the discovery of the Bathurst Plains, and by the energy of Governor Macquarie the first road was opened in 1815. Following upon this, a way was shortly discovered across the mountains near Lake George, near the spot where Goulburn now stands. These routes remained the easiest lines of communication with the west and south, and when railways appeared they followed the road. Strangely enough the only real gap in the mountains—that situated opposite Newcastle—has not yet been utilised for traffic. The Great Northern Railway traversed the mountains by way of a higher gap at Murrurundi. The interior is connected with the sea by rail at only two points—Sydney and Newcastle.

The early policy of government made Sydney the centre of the whole settlement commercially as well as politically, and this circumstance, coupled with its advantageous situation on an unrivalled natural harbour, which speedily grew into an important shipping centre, made it from the earliest times the point from which roads inevitably radiated, and to which trade and commerce were irresistibly drawn.

Its development proceeded above that of all other towns, even before the advent of railways, despite the fact that its immediate district was not well

adapted for agriculture and its access to the fertile interior was impeded by difficult mountains. In point of situation Port Stephens and Jervis Bay, both excellent natural harbours, situated respectively 85 miles north and 82 miles south of Sydney, are better qualified to constitute commercial outlets for the interior, and this remark applies with especial force to Port Stephens, which is the most central port of the State and has the advantage of large coal supplies in close proximity. The development of this port is strongly urged as part of a decentralisation scheme, and it is probable that Jervis Bay will also become a shipping centre when it is opened up in connection with the establishment of the Federal capital at Canberra. There is no good harbour north of Port Stephens, and Twofold Bay on the far South Coast is probably too difficult of access from the interior to develop into an oversea shipping port.

Political and economic factors and the accident of settlement have thus largely outweighed considerations of natural advantage, and Sydney has developed into the commercial, manufacturing, and trading centre of practically the whole of the State. Outlying districts which are not yet connected to the metropolis by rail find their outlet in other States. Such localities are the southern Riverina, the Broken Hill district and the far North Coast, but railways are rapidly being extended to all of these.

#### *Systems of Communication.*

In view of the sparse population of the State, the construction of railways essential to development is a work involving considerable expenditure and a problematical return. It has, therefore, been almost exclusively undertaken by the State, the only private lines of importance being from Deniliquin to Moama on the Victorian border, from Broken Hill to the South Australian border, and certain lines on the coal fields around Newcastle. The system of State railways is extensive and rapidly growing, and serves to maintain efficient communication over a little more than one-half of the area of the State. Beyond that area are situated the sparsely populated Western Plains, in which small development is at present possible. Only two lines have been extended into this region, the western line to Bourke and that by which it is proposed to connect Broken Hill with Sydney.

The steadily growing system of lines provides a prompt and efficient means of communication and transport throughout most of the more closely settled districts and, as new settlement becomes possible, it is extended further and further, for it is generally recognised now that settlement follows rather than precedes the railway.

Beyond the railway heads and between lines and along the coast extensive coach services, usually run under contract with the Government for mail carriage, connect the settlements. Such traffic is as a rule horse-drawn, but motor vehicles are being used both for transport and communication. National roads are maintained by a special appropriation of Parliament, and the many local roads have been handed over to an efficient local control.

Highly-developed postal, telegraphic, and telephonic services under Government control have been established. Every centre of population possesses a post and telegraph office and a regular mail service, and continuous telephone services have been established in every centre of commercial importance; even outlying districts have telephone connections.

Communication with Europe is closely maintained by means of four cable lines, which carry more than half-a-million messages a year, and a powerful wireless installation exists capable of communication with America. Regular



fortnightly ocean mail and passenger services are maintained with the United Kingdom *via* Suez, and three every month *via* Canada and America. A considerable fleet of cargo steamers voyage regularly between New South Wales and other countries, and much shipping plies along the coast.

#### POLITICAL DIVISIONS.

In New South Wales there are no racial groups, the population is homogeneous and preponderantly British. Consequently there is an entire absence of those perplexing racial problems which complicate the politics of most other countries. The native population—aboriginals, or “blackfellows,” as they are called—was never extensive, and, despite the beneficent care of the State, is gradually dying out; they now number less than one per thousand of population.

Contrary to what might be expected of a new country in process of development, the greater part of the population consists of town dwellers engaged for the most part in commercial and industrial occupations, while only a small element is directly engaged in exploiting the wealth of the land. The greater part of the inhabitants live in those cities and towns in and about the metropolitan area and in the favoured spots where nature has given especially ready access to the mineral resources, such as in the coal-mining districts around Newcastle and Maitland, Wollongong and Lithgow, and on the extensive silver-lead fields of Broken Hill. Apart from these industrial centres, which contain more than one-half of the population, there are few large towns. This fact has produced the anomaly that in a community dependent for its existence on great primary industries, such as the pastoral industry, agriculture and dairying, the dominant political interests are more urban than rural, and the main political problems are industrial in the narrow sense.

There are in New South Wales approximately 1,350 settlements with a population exceeding 150, but few of these, perhaps twenty individual settlements, possess more than 5,000 inhabitants. Little less than one-half of the population live in the metropolis itself, nearly one-quarter live in the larger towns, while the remainder live in the smaller settlements and rural districts.

For various purposes of Government the State is distributed in a number of different ways, including State and Federal electoral divisions, local government areas, land divisions and districts, pastures protection board districts, counties, and statistical divisions.

There are three administrations, Federal, State, and Local, each charged with the conduct of special matters and covering the whole of the State. The State and Federal Parliaments meet respectively in Sydney and Melbourne (Victoria), while the Local Government bodies have headquarters at convenient centres in their respective districts.

For the purpose of electing members of Parliament the State is divided into two separate sets of electoral divisions, which are independent of each other, but correspond as nearly as possible and follow natural boundaries. They are temporary divisions and subject to rearrangement whenever necessary. For State purposes there are twenty-four such divisions forming plural-member constituencies, and for Federal purposes, twenty-eight forming single-member constituencies. The State is administered as an integral part of the Commonwealth in Federal affairs and as a political entity in State affairs. There are no provinces or subdivisions.

In matters of Local Government, which include lighting, roads and bridges, building and sanitary and water services, numerous local authorities are set up in the form of councils, elected by ratepayers, to administer carefully-defined areas. These consist of 184 municipalities or urban areas and 136 shires or areas, which are principally rural. They vary very greatly in size and importance, and cover the whole of the populous part of the State. With the exception of a few small municipal areas, the Western Plains Division, comprising two-fifths of the area of the State, is administered by a specially constituted board.

The Pastures Protection districts are sixty-seven in number, and consist of areas of irregular size, chosen chiefly with a view to securing districts possessing homogeneity of pastoral interests. They are administered under the Pastures Protection Act by unpaid elective local boards, whose functions are to protect the interests of the pastoral industry chiefly against the rabbit pest.

The administration of land matters is, under the Crown Lands Acts, regulated by a system of Land Boards functioning in allotted districts. The State is distributed into three main land divisions, the Eastern, Central, and Western, and the Eastern and Central Divisions are further subdivided into thirteen Land Districts, and these again into eighty-seven Local Land Districts for facility in administration and classification.

The oldest and only permanent territorial divisions of the State are the counties, which, however, are now of little importance. The distribution of the State into these areas was begun in 1827 by Sir Thomas Mitchell, when he distributed the known and settled districts into nineteen counties, which were used for a number of years as divisions for purposes of government, and regarded as the limits of lawful settlement. These were subsequently extended throughout the State until 141 counties were defined. But with their extension their uses gradually ceased, and as population spread the new and more serviceable divisions referred to above were created. Counties are subdivided into parishes, and further into portions in land surveying, and these subdivisions are used officially to indicate the location of land.

For statistical purposes it has been found convenient to adopt county boundaries since they generally follow the natural lines of the country, and contain uniform areas and territory. By careful grouping of counties the State is cast into fairly accurate subdivisions classified according to terrain. In all, fourteen statistical divisions are used; these are shown on the map contained in the frontispiece.

## CLIMATE.

**M**ETEOROLOGICAL observations in New South Wales are directed from Sydney as the centre of a subdivision of Australia, which includes the greater part of New South Wales; a special climatological station is maintained also at Dubbo, and there are many reporting stations throughout the State. Bulletins and weather charts are issued daily from the Meteorological Bureau, and rain maps and isobaric charts are prepared.

Signals are displayed in Sydney to give warnings of storms and to indicate fair weather, rain, and cold or heat waves; forecasts are telegraphed daily to towns in country districts, and the city forecasts are published in the early editions of the press. Special forecasts regarding cyclonic conditions are issued to the press and to the Commonwealth and State Departments of Navigation; this arrangement enables precautions to be taken in regard to shipping.

The weather in New South Wales is determined chiefly by anticyclones, or areas of high barometric pressure, with their attendant tropical and Antarctic depressions, in which the winds blow spirally outward from the centre or maximum. These anticyclones pass almost continuously across the face of the continent of Australia from west to east, and the explanation of the existence of such high-pressure belts lies probably in the fact that this area is within the zone in which polar and equatorial currents meet and for some time circulate before flowing north and south. The easterly movement depends on the revolution of the earth.

A general surging movement occasionally takes place in the atmosphere, sometimes towards, and sometimes from, the equator. The movement causes sudden changes in the weather—heat when the surge is to the south, and very cold weather when it moves towards the equator. Probably these sudden displacements of the air systems are due to thermal action, resulting in expansion or contraction in the atmospheric belts to the north and south of Australia.

New South Wales is peculiarly free from cyclonic disturbances, although occasionally a cyclone may result from monsoonal disturbances, or may reach the State from the north-east tropics or from the Antarctic low-pressure belt which lies to the south of Australia.

The seasons occur as follows:—Summer—December, January, and February; autumn—March, April, and May; winter—June, July, and August; spring—September, October, and November.

January is the hottest and July the coldest month, and the temperatures of autumn and spring are approximately the mean of the whole year.

In the summer months the prevailing winds on the coast of New South Wales blow from the north, with an easterly tendency which extends to, and in parts beyond, the highlands; in the western districts the winds are usually from the west. Southerly winds, which are characteristic of the summer weather on the coast, occur most frequently during the months from September to February, and between 7 p.m. and midnight. These winds, which blow from the higher southern latitudes, cause a rapid fall in temperature, and are sometimes accompanied by thunderstorms.

During winter, the prevailing direction of the wind is westerly. In the southern areas of the State the winds are almost due west, but proceeding northwards there is a southerly tendency, while on reaching latitudes north of Sydney the direction is almost due south. When they reach the north-eastern parts of the State, these winds are deflected in a westerly direction, and are merged in the south-east trade winds north of latitude

30°. During the cold months of the year, Australia lies directly in the great high-pressure stream referred to previously, and the high pressure when passing over the continent tends to break up into individual anticyclonic circulations.

Generally, the wet season extends over the first six months of the year, although occasionally the most serviceable rains occur in the spring. The coastal districts receive the heaviest falls, ranging from 30 inches in the south to 70 inches in the north. Despite their proximity to the sea, the mountain chains are not of sufficient elevation to cause any great condensation; so that, with slight irregularities, the average rainfall gradually diminishes towards the western limits of the State, the figures ranging from a mean of about 50 inches on the seaboard to 10 or 20 inches on the Western Plains.

A classification of areas in New South Wales in accordance with the annual rainfall shows the following distribution:—

Annual Rainfall.		Area.	Annual Rainfall.		Area.
Inches.		Sq. Miles.	Inches.		Sq. Miles.
Over 70	...	668	20 to 30	...	77,202
60 to 70	...	1,765	15 „ 20	...	57,639
50 „ 60	...	4,329	10 „ 15	...	77,268
40 „ 50	...	15,804	Under 10	...	44,997
30 „ 40	...	30,700			—
			Total	...	310,372

The distribution of rainfall is dependent on three factors—(1) the energy present in the atmospheric systems, (2) the rate of movement of the atmospheric stream, and (3) the prevailing latitudes in which the anticyclones are moving.

The chief agencies for precipitating rainfall are Antarctic depressions, monsoonal depressions, and anticyclonic systems. Antarctic depressions are the main cause of the good winter rains in the Riverina and on the South-western Slope. A seasonal prevalence of this type of weather would cause a low rainfall on the coast and tablelands, and over that portion of the inland district north of the Lachlan River. A monsoonal prevalence ensures a good season inland north of the Lachlan, but not necessarily in eastern and southern areas. An anticyclonic prevalence results in good rains over coastal and tableland districts, but causes dryness west of the mountains.

June is the wettest month generally in all southern districts west of the highlands; in other parts of the interior the month of greatest humidity is January, February, or March. On the Northern Tablelands, the Central Western Slope, and Central Western Plains, the highest monthly average is recorded in January. February is the wettest month on the North-western Plains and over the country to the north of the Darling and east of the Paroo; and March in the far north-west quarter and over the central Darling country between Tilpa and Poonaerie. In the coastal districts, every month, except November, is represented in some part as the wettest.

## CLIMATIC DIVISIONS.

The territory of New South Wales may be divided into four climatic divisions—the Coast, the Tablelands, the Western Slopes of the Dividing Range, and the Western Plains.

In the Coastal division, which lies between the Pacific Ocean and the Great Dividing Range, the average rainfall is comparatively high.

Sydney is situated half-way between the extreme northern and southern limits of the State. Its mean annual temperature is 63° Fahrenheit. The mean range is only 17°, calculated over a period of sixty-two years, the mean summer temperature being about 71°, and the mean winter temperature 54°.

The following table shows the average meteorological conditions of Sydney based on the experience of the sixty-two years ended 1920:—

Month.	Hourly Average Reading of Standard Barometer, Corrected to 32° Fahr., Standard Gravity and Mean Sea Level.	Temperature (in shade).			Rainfall.			
		Mean Standard.	Average Reading of Maximum Thermometer.	Average Reading of Minimum Thermometer.	Average.	Greatest.	Least.	Average number of days Rain
		°	°	°	inches.	inches.	inches.	
January ... ..	29·978	71·7	78·4	64·9	3·62	15·26	0·42	14·1
February.. ...	29·899	71·2	77·4	64·9	4·51	18·57	0·34	14·1
March ... ..	30·079	69·3	75·5	62·9	5·06	18·70	0·42	14·9
April ... ..	30·129	64·6	71·1	58·0	5·38	24·49	0·06	13·5
May ... ..	30·073	58·6	65·2	52·1	5·13	23·03	0·18	15·0
June ... ..	29·992	54·5	60·7	48·2	4·96	16·30	0·19	12·6
July ... ..	30·143	52·5	59·2	45·8	4·84	13·21	0·12	12·5
August ....	30·094	55·0	62·4	47·6	3·06	14·89	0·04	11·4
September ...	30·152	59·1	66·7	51·4	2·90	14·05	0·08	12·0
October ... ..	29·899	63·5	71·2	55·8	2·95	11·14	0·21	12·6
November ...	29·956	67·1	74·4	59·6	2·87	9·88	0·07	12·5
December ...	29·926	70·1	77·3	62·9	2·83	8·47	0·23	13·0
Annual ... ..	30·027	63·1	70·0	56·2	48·12	82·76	23·01	158·2

The North Coast districts are favoured with a warm, moist climate, the rainfall being from 40 to 70 inches annually. The mean temperature for the year is from 66° to 69°, the summer mean being 75° to 78°, and the winter mean 56° to 59°. On the South Coast the rainfall varies from 30 to 60 inches, and the mean temperature ranges between 57° and 63°, the summer mean being from 66° at the foot of the ranges to 70° on the sea coast, and the winter from 48° to 54° over the same area.

Coastal rains come from the sea with both south-east and north-east winds, being further augmented in the latter part of the year by thunderstorms from the north-west.

The following table shows the meteorological conditions of the principal stations in the Coastal Division, arranged in the order of their latitude. These stations are representative of the whole division, and the figures are the average of a large number of years:—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall— Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches
Lismore ... ..	13	52	67·2	75·4	57·0	22·5	116·2	23·0	50·85
Grafton ... ..	22	40	67·6	76·3	57·4	25·9	114·0	24·9	38·44
Singleton ... ..	40	135	64·1	76·1	52·1	20·3	113·9	22·0	29·00
West Maitland ...	18	40	64·2	74·7	53·0	21·1	114·0	28·0	34·01
Newcastle ... ..	1	34	64·6	72·3	55·4	15·1	110·5	31·0	46·95
Sydney ... ..	5	146	63·1	71·0	54·0	13·7	108·5	35·9	48·02
Wollongong ... ..	0	54	63·0	70·1	54·8	16·8	113·4	31·9	43·72
Nowra ... ..	6	30	62·8	71·1	54·0	19·9	109·5	32·6	38·09
Moruya Heads ...	0	50	61·0	68·1	53·0	19·1	114·8	26·3	36·45
Bega ... ..	8	50	60·3	69·6	50·0	26·6	109·0	20·0	32·83
Eden ... ..	0	107	60·0	67·7	51·8	14·2	106·0	29·3	34·16

Taking the coast as a whole, the difference between the mean summer and mean winter temperature is about 17° only.

On the Northern Tableland the rainfall is consistent, ranging from 30 inches in the western parts to 40 inches in the eastern. The temperature is cool and bracing, the average for the year being between 54° and 60°; the mean summer temperature lies between 65° and 70°, and the mean winter between 43° and 45°. The Southern Tableland is the coldest part of the State, the mean annual temperature being about 56°. In summer the mean ranges from 57° to 68°, and in winter from 34° to 44°. At Kiandra, the elevation of which is 4,640 feet, the mean annual temperature is 44·4°. Near the southern extremity of the tableland, on the Snowy and Muniong Ranges, the snow is present generally throughout the year.

The statement below shows, for the Tablelands, similar particulars to those already given for the Coastal Division:—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall— Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Tenterfield ... ..	80	2,827	53·8	69·0	47·2	24·4	107·1	11·9	32·48
Inverell ... ..	124	1,980	60·0	71·8	47·3	29·2	110·6	13·4	30·40
Glen Innes ... ..	90	3,518	56·4	67·2	44·1	25·3	107·3	14·4	31·81
Cassilis (Dalkeith) ...	120	1,500	60·2	72·2	47·3	24·8	109·5	19·0	23·74
Mudgee ... ..	121	1,635	60·0	72·6	46·8	30·3	114·9	15·0	25·63
Bathurst ... ..	96	2,200	57·1	69·8	44·2	28·0	112·9	13·0	23·88
Kurrajong Heights ...	35	1,870	53·3	61·7	43·9	13·3	99·5	25·5	50·46
Katoomba ... ..	58	3,349	53·6	63·0	43·2	15·4	100·0	25·9	55·97
Crookwell ... ..	81	2,000	52·0	64·7	39·4	23·7	100·8	12·1	32·42
Goulburn ... ..	54	2,129	56·1	67·7	44·1	24·0	111·0	13·0	24·97
Yass ... ..	92	1,657	57·2	70·3	44·7	24·3	108·0	21·0	24·58
Kiandra ... ..	88	4,640	44·4	55·3	32·6	20·7	91·0	4 below zero	64·53
Bombala ... ..	37	3,000	53·0	64·0	42·1	24·7	98·5	17·0	22·76

On the Western Slopes the rainfall is distributed uniformly, varying from 20 inches in the western parts to 30 inches in the eastern; the most fertile part of the wheat-growing area of the State is situated on the southern part of these slopes, where the average rainfall is about 25 inches. The mean annual temperature ranges from  $69^{\circ}$  in the north to  $60^{\circ}$  in the south; in the summer from  $81^{\circ}$  to  $74^{\circ}$ , and in the winter from  $53^{\circ}$  to  $47^{\circ}$ .

North of the Lachlan River, good rains are expected from the monsoonal disturbances during February and March, although these may come as late as May, and at times during the remainder of the year. These monsoonal or seasonal rains are caused by radiation in the interior of Australia during the summer months, when the heat suspends the moisture accumulated chiefly from the Southern Ocean.

In the Riverina district, south of the Murrumbidgee generally, and on the South-western Slopes, fairly reliable rains, light but frequent, are experienced during the winter and spring months.

The next statement gives, for the principal stations on the Western Slopes, information similar to that shown for Coast and Tablelands:—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall— Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	High.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Moree ... ..	204	680	67.5	80.4	53.2	30.2	117.3	18.0	23.48
Bingara ... ..	153	1,200	64.4	77.3	50.3	28.9	112.5	16.0	31.58
Quirindi ... ..	115	1,278	63.9	76.5	48.5	27.1	113.6	17.0	37.92
Dubbo ... ..	177	863	63.6	77.5	49.5	27.9	115.4	16.9	22.40
Young ... ..	140	1,416	59.4	73.6	45.8	26.2	113.9	20.3	25.42
Wagga Wagga ... ..	158	615	62.2	76.2	48.7	25.3	119.0	18.4	21.51
Urana ... ..	213	400	62.3	76.2	48.1	22.6	117.0	18.4	17.18
Albury ... ..	175	531	60.8	74.3	47.7	27.3	117.3	19.9	27.94

The Western District consists of a vast plain, the continuity of which is broken only by the Grey and Barrier Ranges. Owing to the absence of mountains in the interior, the annual rainfall over a great part of this division, which lies in the zone of perpetual high pressure, does not exceed 10 inches. It increases from 8 inches on the western boundary to 10 and 15 inches along the Darling River, and 20 inches on the eastern limits. The mean annual temperature ranges from  $69^{\circ}$  in the north to  $62^{\circ}$  in the south; in the summer from  $83^{\circ}$  to  $74^{\circ}$ , and in the winter from  $53^{\circ}$  to  $45^{\circ}$ .

Although the summer readings of the thermometer in this district may be from  $10^{\circ}$  to  $20^{\circ}$  higher than those on the coast, the heat is not distressing. Excessive heat is experienced occasionally, and with many summers intervening, its occurrence is in all probability due to a temporary stagnation in the easterly atmospheric drift. Under normal conditions, air entering



Western Australia with a temperature of 70° or 80° would accumulate only 20° to 25° by contact with the radiation from the soil during its passage across the continent.

The winter, with an average temperature over 50°, accompanied by clear skies and an absence of snow, leaves little to be desired from the standpoint of health; while, also owing chiefly to the dryness of the climate, these inland regions produce the best merino wool in the world.

The meteorological conditions of the Western Plains and the Riverina division will be seen from the following statement, corresponding to those given already for the other divisions of the State:—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall— Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Brewarrina ... ..	345	430	68·7	82·8	54·1	26·4	120·0	28·0	15·51
Bourke ... ..	386	350	69·2	83·7	54·1	27·6	127·0	25·0	14·21
Wilcannia ... ..	473	246	66·4	80·3	52·2	26·1	120·8	21·8	10·33
Broken Hill ... ..	555	1,000	64·7	77·8	51·2	23·6	115·9	23·5	9·89
Condobolin ... ..	227	700	65·4	79·0	51·3	27·1	122·2	20·0	17·40
Wentworth ... ..	478	144	63·6	76·3	51·4	25·7	119·0	21·0	12·19
Hay ... ..	309	291	63·2	76·2	50·3	27·4	117·3	22·9	14·18
Deniliquin ... ..	287	268	62·0	74·8	49·5	25·3	121·1	18·0	16·23

## OBSERVATORY.

Sydney Observatory, lat. 33° 51' 41·1" south, long. 151° 12' 23·1" east, established in the year 1856, is a State institution. The work of the Observatory is of an astronomical character; the principal instruments are the transit circle, astrograph, equatorial, and seismograph. Owing to the unsuitableness of the atmosphere in Sydney the astrograph has been removed to Pennant Hills. The principal scientific work is the determination of the position, distribution, and movement of stars in the region allotted to Sydney (viz., 52° to 65° south declination) in the great international scheme. In addition, occasional observations, such as those of comets, are made with the equatorial, and systematic records of earth tremors are sent to the Earthquake Committee of the British Association for the Advancement of Science. Practical work embraces the determination and notification of the standard time of the State; correspondence of an educational character on astronomical matters, and day and evening reception of visitors interested in astronomy.

## STANDARD TIME.

The mean time of the 150th meridian of east longitude, or 10 hours east of Greenwich, has been adopted as the standard time throughout New South

Wales, except in the district of Broken Hill, where South Australian standard time has been adopted, viz.,  $142\frac{1}{2}^{\circ}$  of east longitude, or 9 hours 30 minutes east of Greenwich. In Western Australia the standard time is the  $120^{\circ}$  of east longitude, or 8 hours east of Greenwich; in the States of Queensland, Victoria and Tasmania, the standard time is the same as in New South Wales.

#### TIDES.

A self-recording tide-gauge has been in operation at Fort Denison, in Port Jackson, since 1867. The tidal datum adopted is Low Water, Ordinary Spring Tide. Taking this as zero, the mean sea-level is 2.52 feet; ordinary low water, 0.78 feet; ordinary high water, 4.20 feet; and the mean daily range is 3 feet 5 inches. The lowest tide was recorded on 16th July, 1916, when the gauge fell 1 foot 3 inches below datum. The highest tide was recorded on 26th May, 1880, viz., 7 feet  $6\frac{1}{2}$  inches; in 1876 the gauge recorded 7 feet  $4\frac{1}{2}$  inches on 22nd June, and 7 feet 3 inches on 21st July. On 3rd August, 1921, the gauge registered 7 feet 2 inches, and on that day occurred the greatest tidal range on record—6 feet  $9\frac{1}{2}$  inches.

At Port Hunter, the average rise and fall of ordinary tides is 3 feet  $4\frac{1}{2}$  inches, and of spring tides 5 feet  $5\frac{1}{8}$  inches; the greatest range being 6 feet  $6\frac{1}{2}$  inches. The highest tide registered was 7 feet 4 inches in May, 1898.

On the coast the average rise of spring tides may be taken as 5 feet 6 inches.

## GEOLOGICAL FORMATION.

THE knowledge of the geology of the State is based on the labours of many persons, especially the late Rev. W. B. Clarke, Professor Sir Edgeworth David, the late Mr. C. S. Wilkinson, Government Geologist, and by Messrs. E. F. Pittman, J. E. Carne, and E. C. Andrews, his successors in that office. The Rev. W. B. Clarke first classified systematically the various sedimentary formations found in New South Wales. The original classification, however, has been modified somewhat, and the rocks, as they are known now, are classified as follows:—

<i>Cainozoic</i> ...	{	Post Tertiary {	Recent.
			Pleistocene.
	{	Tertiary ...	{ Pliocene.
			{ Miocene.
			{ Eocene.
<i>Mesozoic</i> ...	{	Cretaceous ...	{ Upper Cretaceous—Desert Sandstone.
			{ Middle Cretaceous—Auriferous Alluvial Leads at Mount Brown, Tibbooburra, and the Peak, near Kayrunnera.
			{ Lower Cretaceous—Rolling Downs Formation.
			{
	{	Jurassic. ...	{ Talbragar Beds and Clarence River Coal Measures.
			{
<i>Palæozoic</i> ...	{	Triassic—Hawkesbury Series	{ Wianamatta Shales.
			{ Hawkesbury Sandstones.
			{ Narrabeen Shales.
			{
	{	Permo-Carboniferous	{ Upper or Newcastle Coal Measures.
			{ Dempsey Beds.
			{ Middle or Tomago Coal Measures.
			{ Upper Marine Series.
			{ Lower (Greta) Coal Measures.
			{ Lower Marine Series.
			{
			{
	{	Carboniferous.	
			Devonian.
			Upper Silurian.
			Lower Silurian (Ordovician).
			Pre-Cambrian
			{ Barrier Ranges.
			{ Archæozoic

### PALÆOZOIC PERIOD.

*Palæozoic* rocks extend throughout almost the whole eastern portion of the State, principally on the western watershed of the Main Dividing Range, in the country where the Murrumbidgee, Lachlan, and Abercrombie Rivers rise. They appear on the eastern watershed, along part of the coast near Bateman's Bay, and, striking inland, are found in the basin of the Clyde, and the upper valley of the Shoalhaven. Slates containing Lower Silurian fossils (Graptolites) have been found at many localities in the Southern and Western districts—the principal are on the border of Victoria, to the south and south-west of Delegate; at Myall Reefs, near Tomingley; at the Junction Reefs, near Mandurama; on the Shoalhaven River; at Tallong; and at Cadia, near Orange.

The *Upper Silurian* rocks extend as far north as Mudgee, where they are overlain by the Permo-Carboniferous strata of the Hunter Valley, and by the belt of volcanic rocks extending along the Liverpool Range. They occur mainly in the Southern and Western Divisions of the State. The

Silurian rocks consist of sandstone, slate, and limestone, and show evidence of metamorphism, particularly in the country around Bathurst and Hill End. Limestone beds, of considerable extent, are scattered throughout this formation. These are composed chiefly of crinoids and corals which outcrop prominently in the Wellington district, near Molong, and at Gulgong, and Tuena, also in the Yass district. In the limestone formations are found magnificent caves, such as the Jenolan, Wellington, Wombeyan, Bungonia, and Abercrombie Caves. The caves at Yarrangobilly, in the Kiandra district, are also very attractive.

*Lower and Middle Devonian* beds, highly fossiliferous, consisting mainly of limestones and shales, are well developed in the Murrumbidgee district, and in the central western areas. Those at Tamworth are mainly coralline, and are associated with radiolarian rocks.

The *Upper Devonian* rocks are seen at Mount Lambie, near Rydal, where the measurement of a section of strata has shown a thickness of not less than 10,000 feet. They occur also in the northern, southern, and western districts.

The *Carboniferous* Rocks.—The coal-bearing rocks are of three distinct systems, of which the first is probably of Lower Carboniferous age. Two seams, the one 5 feet and the other 7 feet in thickness, occur near the top of this system; but the coal in both is full of bands, and otherwise too dirty to be of economic value. The upper beds are of glacial origin.

The *Permo-Carboniferous* Rocks.—The second system, known as the Permo-Carboniferous, contains many seams of workable coal, which have been developed in New South Wales and Queensland. Productive coal measures occur in this system in three horizons in New South Wales: the first and lowest of these is the Greta (Stony Creek) series, the second the Tomago (East Maitland) series, and the last and uppermost the Newcastle series. The freshwater coal-bearing beds are associated with marine series, an upper and lower, each of which contains a glacial epoch. The total thickness of this system and its associated strata at Newcastle is about 20,000 feet, containing a total thickness of about 150 feet of coal, without taking into account seams less than 3 feet thick. Borings at Cremorne, a point on the northern margin of Sydney Harbour, as well as at Holt-Sutherland and Liverpool, have proved the continuous extension of at least the upper or Newcastle series of coal-seams between Newcastle on the north and Bulli on the south. Reference to coal-mining operations under Sydney Harbour is made in the chapter, Mining Industry.

#### MESOZOIC PERIOD.

The *Triassic* Rocks.—The Hawkesbury and Wianamatta series, which overlie the Carboniferous formation of that part of the country through which the Hawkesbury and its principal tributaries flow, belong to the Mesozoic period. In this series occur the wonderful gorges of the Blue Mountains, and the beautiful harbours of Port Jackson, Port Hacking, and Broken Bay. The rocks consist of grey, purple, and chocolate coloured shales, and yellowish-grey sandstones, and the maximum thickness of the strata is estimated at 1,700 feet. The Triassic and Jurassic rocks form the principal storehouse of the artesian water supply of the north-western portion of the State, where they underlie the Rolling Downs or Lower Cretaceous formation. Most of the deeper bores in this arid region obtain the bulk of their supply of water from the Triassic sandstones. The Wianamatta shales contain fireclays which are used extensively for brick and pottery manufacture, and the Hawkesbury sandstones furnish fine building stone of great durability.

The Wianamatta formation extends round Sydney, and covers a space in the shape of an irregular triangle, with the angular points at Picton on the south, Richmond on the north, and Sydney on the east. The beds are composed of fine sedimentary deposits of argillaceous shales, and are of comparatively little thickness. They appear to have been deposited in hollows worn by denudation out of the sandstone on which they rest directly. The Narrabeen shales, the Hawkesbury sandstones, and the Wianamatta shales do not contain any remarkable seams of coal. All three formations are intersected by igneous dykes, which have intruded also the underlying Permo-Carboniferous rocks, and where they have come in contact with the coal seams, the latter have been converted into coke, sometimes to a thickness of 3 feet or more.

*Jurassic* rocks on the Talbragar River, about 20 miles north of Gulgong, occupy a denuded hollow in the Hawkesbury sandstones. They are of small extent, and consist of yellowish shales, containing numerous fish and plant remains. The *Tœniopteris* beds of the Clarence measures belong to this system, but portion of the measures may belong to the Triassic system.

It is estimated that the length of that part of the Clarence coal measures which contains the principal seams is about 65 miles from east to west, while its width is about 37 miles from north to south. The most remarkable beds in the Clarence basin are a series of massive whitish sandstones, which are considered to be the equivalents of the Hawkesbury sandstones, and are named the Middle Clarence Series, as they occupy an intermediate position between the upper and lower coal-beds of the basin. None of the seams in this coal-field has yet been proved to be of commercial value. It is estimated that the top seam, with a total thickness of 5 feet 7½ inches, contains 1 foot 9 inches of coal fit for ordinary consumption, while the second and third seams have not yet been tested sufficiently to allow a definite opinion to be formed of their value. It is probable, however, that even if the seams prove to be of insufficient thickness and purity to yield coal fit for purposes of export, they may supply sufficient coal of fair quality for local requirements.

The *Cretaceous* formations occupy the north-western part of the State, extending from the Barwon westward towards the north-west corner. The upper *Cretaceous* beds contain deposits of precious opal. Water-bearing strata have been reached at depths varying from 89 feet to 2,070 feet, and large quantities of water have been obtained, though principally from the underlying Triassic and Jurassic sandstones. The steps taken in regard to utilising the artesian water are described in the chapter relating to Water Conservation and Irrigation.

#### CAINOZOIC PERIOD.

To this period belong the deposits covering the greater portion of the central and western districts of the State, which embraces the valleys of the great western rivers and their chief tributaries. The formation is, however, intersected by a broad broken belt, chiefly of Silurian rocks, extending across its centre, from the Bogan river towards the Great Barrier Range on the farther side of the Darling. Large patches of Devonian rocks also are met with in the same region. Making these deductions, the *Post-Tertiary* rocks cover more than one-third of the whole State. The vast alluvial plains were formed during the Pliocene and Post-Pliocene periods. The alluvial deposits are of variable thickness, sometimes shallow; but in the great plains, between the main rivers which intersect the country, the deposits are of very great depth.

A most interesting feature in the Cainozoic period of the State is the great denudation to which the continent has been subjected. This

denudation characterised the Lower and Middle Tertiary. Basaltic lavas also flooded the sites of the present plateaus at this time and the existing mountains were formed at the close of the Tertiary period.

#### IGNEOUS AND METAMORPHIC ROCKS.

The area occupied by these rocks comprises one-eighth of the State. The principal rocks belonging to the series consist of varieties of granite, quartz-porphry and felstone, diorite, basalt, and serpentine. Granite occurs for the most part in the northern and southern masses of the Great Dividing Range, but is found outcropping throughout the Silurian deposits, which cover a large part of the centre of the State. Diorite and basalt occur principally in the country between the Macleay and Manning Rivers, and on the slopes of the Liverpool Range, between the upper waters of the Namoi and Macleay. Serpentine is found in different parts of the State, chiefly at Gundagai, Bingara, Lucknow, Nundle, Yulgilbar on the Clarence River, and Port Macquarie. The granites, quartz-porphyrines, and felstones have been recognised as belonging to the Palæozoic age; while the volcanic rocks, basalts, and others are chiefly contemporaneous with the Tertiary series. At Kiama there is an immense development of interbedded basalt lavas and tuffs in the Permo-Carboniferous rocks.

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## FAUNA.

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### MAMMALS.

AT the present time mammals are represented in Australia by the Monotremes, the Marsupials, a dog, and many rats and bats, as well as by the marine aquatic animals—whales, seals, and the dugong.

The Monotremes, which are confined to Australia, Tasmania, and New Guinea, comprise the platypus (*Ornithorhynchus anatinus*) and the native porcupine (*Tachyglossus* and *Proechidna*).

The platypus—the “mallangong” and “tambril” of the aborigines—inhabits Australia and Tasmania, and is one of the most interesting animals known. The male, which may be distinguished by the large horny spur on the hind foot, is much larger than the female; its total length is 24 inches, while the female seldom exceeds 19 inches. The fur of the platypus is close and velvety; in colour it is deep brown on the upper surface, and greyish or yellowish white below. The muzzle is produced into a broad, flattened beak, covered with a delicate and sensitive skin; the tail is well developed, broad, and flattened; and the feet are modified into swimming organs, the five toes being webbed extensively; the teeth, which are unlike those of any other existing mammal, are shed early in life, their place being taken by a series of horny plates. As a mammal, the platypus is interesting, chiefly because it lays eggs. These are white in appearance, usually two in number, although three and even four may be laid at one time; in texture they are similar to the eggs produced by reptiles. When hatched, the young are naked and helpless, and are nourished with their mother's milk, as in the case of all mammals. The nest of the platypus is formed at the end of a burrow, which is reached by two openings—one above and the other below the surface of the water.

The native porcupines, or ant-eaters, also lay eggs, but differ from the platypus in that the females carry their two eggs in a pouch, where they are hatched by the warmth of the body. The common species (*Tachyglossus aculeatus*) has the fur thickly mingled with spines, which sometimes conceal the hair beneath. The muzzle is produced into a long cylindrical beak, which is not known to possess teeth at any period; it is admirably adapted to protect and assist the worm-like, extensile tongue. The feet are stout, and furnished with five powerful claws. The tail is short and conical. Several species have been described, but modern zoologists are inclined to consider them as geographical varieties. Regarded thus, the species ranges from south-eastern New Guinea, throughout Australia to Tasmania. Those which are generically named *Proechidna* are distinguished by possessing only three toes on each foot, and by having a much-curved beak of great length; the known species are confined to New Guinea.

Australia is the great home of the marsupials. To this class belong the great majority of Australian mammals; they are distinguished from the fact that the young are produced in an extremely imperfect state of development, and are nurtured, frequently in an abdominal pouch, for a lengthy period.

The habits and conditions assumed by the marsupials are very varied. They are divided into eight families, namely, the *Macropodidae*, *Phalangeridae*, and *Phascologyidae*, constituting the sub-order of Diprotodonts, which includes the animals with only two front teeth in the lower jaw; and the

*Epanorthidæ*, *Peramelidæ*, *Dasyuridæ*, *Notoryctidæ*, and *Didelphyidæ*, constituting the sub-order of Polyprotodonts, distinguished by having traces of at least six or more such teeth.

*Macropodidæ*.—This family includes the kangaroos, wallabies, tree kangaroos, and rat kangaroos. The kangaroos are so well known that they do not require more than a passing notice. They vary in size from the great grey kangaroo (*Macropus giganteus*), as large as a man, to the little musk kangaroo (*Hypsiprymnodon moschatus*), which can be concealed in the pocket. Their hind limbs are very long, and progression is effected chiefly by hopping, the long tail acting as a balance. The tree kangaroos of Queensland and New Guinea are among the most notable of the family; they climb tall trees, even to the most slender branches. These kangaroos are observed upon the ground less frequently than the others, and there is less difference in the length of their limbs.

*Phalangeridæ*.—This family includes the Australian opossums, the flying opossums, the flying mouse (one of the smallest marsupials), and the clumsy native bear (*Phascogaleus cinereus*)—all fairly well-known forms.

*Phascologidæ*.—The wombats, of which there are four species, are heavily-made, short-limbed animals. They excavate huge burrows in the ground, and feed upon grass and other herbage. They inhabit Australia and Tasmania.

*Epanorthidæ*.—This family is represented by two rat-like animals, called selvas, from South America. They differ from the typical polyprotodonts by having a pair of horizontal lower incisors, like a kangaroo, behind which are several other pairs of functionless teeth.

*Peramelidæ*.—The bandicoots found in Australia and New Guinea, are assigned to seven genera, of which *Thalacomys*, *Perameles*, and *Choropus* are the most noteworthy. Members of the first-named are known as rabbit bandicoots, or beilbys; while the second genus includes the true bandicoots, whose form and habits are well known. The pig-footed bandicoot (*Choropus castanotis*) is separated generally on account of the peculiar structure of the feet, which have a striking resemblance to those of the pig.

*Dasyuridæ*.—The animals included in this family are the marsupial carnivora, and are familiar as native cats (*Dasyurus*) and pouched mice (*Phascogale* and *Sminthopsis*). These forms occur in Tasmania, New Guinea, and adjacent islands, as well as in Australia. The most formidable of the group are the Tasmanian tiger or wolf (*Thylacinus cynocephalus*) and the Tasmanian devil (*Sarcophilus harrisi*), which are confined to that State.

*Notoryctidæ*.—The marsupial moles are not connected in any way with the European mole; nevertheless, they have acquired many similar habits—affording a valuable lesson in parallelism in development. One species (*Notoryctes typhlops*) is known in Central Australia, and another (*N. caurinus*), is found in Wollai, N.W. Australia.

*Didelphyidæ*.—These are the true opossums, and being confined to America, need not be further mentioned here.

Dogs and seals form the carnivora of Australia. The dog family (*Canidæ*) is represented by the dingo, or native dog (*Canis dingo*), called by the aborigines "worregal," dingo being the aboriginal name for the domestic dog introduced by Europeans. The native dog is found on all parts of the Australian mainland, and will inbreed with the domestic dog, crosses being common. It is questionable whether the dingo is indigenous, or whether it was introduced from abroad. Undoubtedly it was acclimatised before the arrival of the first white settlers. The dingo does not bark, its temper is intractable, and it works great havoc among sheep.



The *Rodentia* find representatives in many species of native rats; the typical species belong to the genus *Rattus*, and the Jerboa-like forms to the genus *Conilurus*. The familiar water rat is known as *Hydromys chrysogaster*.

The *Chiroptera* are numerous, and include the flying-foxes and many insectivorous bats. The common flying-fox (*Pteropus poliocephalus*) is found in the brush lands; it haunts the settlements during the fruit season, causing great havoc among orchards and gardens.

Of seals (*Pinnipedia*), the species found off the coast of New South Wales is the Australian sea bear, or eared seal (*Otaria cinerea*), which is a sociable species, seldom found far from its rocky haunts. The sea leopard (*Ogmodon leptonyx*) is a solitary species, and it is caught sometimes off the coast or found stranded on the shore.

Among other mammals belonging to New South Wales, or found contiguous to its coasts, are representatives of the orders *Cetacea* and *Sirenia*, the first comprising whales, porpoises, and dolphins; and the second, manatees and dugongs. Whales have always haunted the coast of the State, and formerly a brisk trade was conducted in oil and whalebone, Twofold Bay, about 208 miles south of Sydney, being the chief seat of the industry. Among the whalebone whales which inhabit the coastal waters may be mentioned the Blue Whale (*Balenoptera musculus*), the Southern right whale (*Balæna australis*), the pigmy whale (*Neobalæna marginata*), and the Sulphur-bottom (*Balenoptera huttoni*). Of sperm whales there are the gigantic *Physeter macrocephalus*, *Mesoplodon layardi*, and *Kogia breviceps*. The dolphin of our waters, commonly called "porpoise," is not distinguishable from the common cosmopolitan form, *Delphinus delphis*. The order *Sirenia* is represented by the dugong (*Halicore dugong*); but it is seldom seen south of Moreton Bay. Its flesh is valued highly by the natives, and its oil is a good substitute for cod-liver oil.

Besides these already mentioned, geological research has brought to light the remains of numerous extinct species of gigantic mammalia. The largest fossil marsupial, the *Diprotodon australis*, an herbivorous monster, was as large as the rhinoceros, and related to the native bear or the wombat. Its bones have been found distributed generally throughout eastern and southern Australia. Fossil remains of another large marsupial, the *Nototherium*, named by the late W. S. Macleay the *Zygomaturus*, have been found also, as well as a member of the family of the *Phascologyidae*, or wombats, and of a marsupial rodent-like animal, named the *Sceparnodon*. In the breccia of the Wellington Valley Caves were found the bones of gigantic Kangaroos (*Macropus titan*), which have been placed in the genera *Palorchestes*, *Procoptodon*, *Protemnodon*, and *Sthenurus*, and those of the *Thylacoleo carnifex* and the true *Thylacinus*. These Caves have yielded also fossil remains of a "porcupine" (*Tachyglossus*) and a platypus (*Ornithorhynchus*), belonging to the order *Monotremata*.

#### REPTILES AND BATRACHIANS.

There are over a hundred different kinds of snakes in Australia. The largest proportion may be classed as venomous, but not deadly to man, and of the dangerous species, those which may be recognised easily, may be narrowed down to five.

The black snake (*Pseudechis porphyriacus*) is the best-known species, and is very common in some of the undisturbed watercourses. It attains a length of 6½ feet, and may be known by its characteristic colouration. The back is a shining black, and the underside a beautiful red, each plate being edged with black; the large scales bordering the belly-plates are red,

tipped with black, and the underside of the tail also is black. This snake glides away rapidly if approached by man; if its escape is prevented it does not bite until it is certain of its object.

The superb snake (*Denisonia superba*) is known also as the copper-headed snake, and in Tasmania as the diamorid snake, which is unfortunate, as the mainland snake of that name is harmless. The superb snake is a southern form, not ranging further north than New South Wales, and is more common on the highlands than elsewhere. In colour it is brown or olive above and yellowish beneath, the scales bordering the belly-plates being yellow or red. In Tasmania this species may attain a length of 6 feet, but on the mainland it is smaller.

The brown snake (*Demansia textilis*) has an extensive distribution in Australia, and is usually of varying shades of brown above and yellowish or greyish beneath. Its colour differs, however, under varying conditions of season and locality, sometimes inclining to red, sometimes to grey. All have the belly scales blotched with a darker tint; this is a characteristic of the brown snake at all ages, and distinguishes the young from those of the tiger snake, which may be banded similarly. The brown snake is the only deadly species mentioned which lays eggs; all the others produce living young. If unable to escape this snake will bite wildly, and will even waste its energy and poison upon a stick; thus it is less dangerous than those which reserve their venom for a certain stroke.

The tiger snake (*Notechis scutatus*) is known also as the brown-banded snake, and in Tasmania, again unfortunately, as the carpet snake. It is one of the most dangerous, and certainly the most vicious species, showing fight where others retreat. The colouration is variable, generally of a light or dark brown, crossed with about fifty darker rings; the under parts are bright yellow, becoming greyish towards the tail. The tiger snake attains a length of 6 feet, and is distributed widely over Australia and Tasmania.

The death adder (*Acanthophis antarctica*) is the smallest deadly species, seldom being longer than 2½ feet. It is a short, thick, repulsive-looking reptile, and is of a very sluggish habit, this feature making it dangerous; it lies motionless until trodden upon, then its venomous stroke is rendered with lightning rapidity. Its colouration also is a source of danger, for it harmonises with its surroundings. The colour varies from a dirty grey, through various shades of brown to reddish hue, and the body is crossed with from forty to fifty darker rings; the belly-plates are grey or pink, clouded with deeper tints. The tail terminates in a thorn, often erroneously regarded as a "sting."

Other deadly species exist, but as only a trained zoologist could distinguish them from one or other of those mentioned, no useful purpose will be served by enumerating them.

Of the snakes classed as venomous, but not deadly, a few of the most familiar forms are mentioned. The ringed snake, or bandabanda (*Furina occipitalis*) is one of the best known, and is unmistakable, being ringed with black and white alternately; it reaches a length of 30 inches, and is found throughout the continent. The red-naped snake (*Pseudolaps diadema*) derives both common and scientific names from the ruby-like spot on the neck. The whip snake (*Demansia psammophis*) reaches a length of 4 feet, and may be recognised by the ring of yellow round the eye, and this colour is continued backwards into a point above the mouth. The broad-headed snake (*Hoplocephalus bangaroides*) is confined to New South Wales, and is often mistaken for a young diamond snake; this species attains a length of 4 feet, and its bite, though not deadly, may produce rather alarming symptoms. A near relative, the banded snake (*Icplocephalus*

*stephensi*), also is peculiar to this State, and are both more or less arboreal in habit. The latter species is fully grown at 2½ feet, and is branded strikingly in two colours, black and yellow.

Of six water snakes occurring in Australia, four are venomous. These, and one which is not harmful, are found only in the northern rivers. The harmless species (*Tropidonotus picturatus*) of this State is distinguished by having the scales keeled instead of smooth, it reaches a length of 3 feet.

The terrestrial harmless species may be noticed briefly. The best known are the diamond and carpet snakes (*Python spilotes*). The former attains a length of 10 feet, and receives its name from the yellow diamond-shaped marks which adorn its black body, and each scale bears a yellow dot; the under parts are yellow with black markings. Whereas the diamond snake is found only in a limited area on the east coast, the carpet snake is known in nearly all parts of Australia; it reaches a length of 10 feet or more. The markings are very beautiful, as indicated by the common name of the snake. The green tree snake (*Dendrophis punctulatus*) is quite slender; it reaches a length of 7 feet, and glides among the branches of trees with great celerity. The plates of the belly are adapted specially for arboreal life, and the colour is green, so that it may escape detection among the foliage.

The blind snakes (*Typhlopidae*), of which thirty-seven species occur in Australia, live underground, and are frequently mistaken for worms. They feed largely upon white-ants and their eggs, and are thus beneficent reptiles.

As regards lizards, none of the Australian species is venomous. The geckos have an evil reputation, which is undeserved, as they are the least capable of inflicting harm. Rock scorpion is a name applied to one of the commonest geckos (*Gymnodactylus platurus*), remarkable for its broadened leaf-like tail. Many of the geckos are called adders, thus the "wood adder," applied to *Gehyra variegata*, "stone adder" to *Diplodactylus vittatus*, "pine adder" to *Diplodactylus spinigerus*, etc. Geckos have the power of climbing smooth surfaces, the cubuck (*Edura robusta*) hiding frequently behind the wall-maps in schools.

The family *Pygopodidae* is peculiar to the Australian region, and its members are, for the most part, very snake-like. The limbs are reduced to a single pair, and are pressed so closely to the body as to be overlooked unless sought for. These lizards have the faculty, in common with geckos and scinks, of throwing off the whole or a portion of their tails when alarmed. The wriggling tail is pounced upon by a bird or other enemy, and the lizard escapes to grow another member, a process which may be repeated as often as necessary.

Long legs, flattened heads, and broad bodies are usually attributes of the *Agamidae*, of which the jew-lizard (*Amphibolurus barbatus*) and spiny lizard (*A. muricatus*) are well-known representatives. These lizards have long tails, and, when much alarmed and hard pressed, some of them raise their bodies from the ground and run upon their hind legs. The water lizards (*Physignathus*), the frilled lizard (*Chlamydosaurus kingii*) of Queensland, and the thorny devil (*Moloch horridus*) belong to the *Agamidae*.

The goanas (*Varanidae*), are the largest Australian lizards, and differ from the iguanas by the characters of the skull and teeth. The latter reptiles, with one exception, are confined to the new world, and have little in common with the Australian, Indian, and African forms.

The majority of lizards in New South Wales belong to the family *Scincidae*, which includes many forms of widely different aspect. The blue-tongued lizard (*Tiliqua*) produces living young; most others lay eggs. The shingle-back (*Trachysaurus*) derives its name from the thick scales which

give it a very rough unpleasant appearance, in marked contrast to the beautiful scinks of the genus *Lygosoma*, with smooth polished scales and rapid movements.

Tortoises are semi-aquatic. They are poorly represented. The long-necked tortoise (*Chelodina longicollis*) and *Emydura macquaria* are the best known. Marine turtles are found very seldom.

In Australia the tailed batrachians (the newts and salamanders) are missing. The frogs and toads are members of one of the three families—*Leptodactylidae*, *Bufo*nidae, or *Hylidae*. Of the first family the best known are the swamp frogs, of the genus *Limnodynastes*, and the little *Crinia*, frequently found under stones. Of the *Bufo*nidae, or toads, there is the beautiful Catholic frog (*Notaden bennettii*), so called from the cross on its back, and the little *Pseudophryne*, often found with *Crinia*. The great bulk of Australian batrachians is made up of the tree frogs (*Hylidae*), distinguishable by having the tips of the fingers and toes dilated into adhesive discs; the hind feet are webbed for swimming. The two most familiar species are the green frog (*Hyla caerulea*), often heard in the iron tanks and spoutings, and the golden frog (*Hyla aurea*), a sociable species, frequenting the water-holes in large numbers.

#### FISHES.

The herrings, of such economic importance in Europe, are seldom netted in New South Wales, where there are several species. The local pilchard (*Sardinia neopilchardus*) may be found in the offing for three or four months annually. As fresh food it would command a ready sale, while the young, tinned as sardines, should be equal to the imported article, and in many cases superior, for tinned sprats are frequently imported as sardines. The sardine of commerce is the young of the European pilchard, a fact not generally known. The maray (*Entrumeus jacksoniensis*) is another herring which should prove valuable. The big-eyed herring (*Megalops cyprinoides*) is not uncommon in the markets, but the delicious sprats of various genera, and the anchovy (*Eugraulis australis*), are seldom to be obtained, though at times they teem off the coast. The fresh-water herring (*Potamolosa nova hollandiae*) affords rapid sport with the fly, and makes a delicious breakfast dish.

The catfishes (*Siluridae*) claim but little attention; the fresh-water species (*Tandanus*) and the estuary catfish (*Cnidoglanis megastomus*) are those usually taken, but, partly owing to prejudice, are not in great favour. Edible eels are numerous in Australian waters. The conger (*Leptocephalus labiatus*), although of small size, is very tasty. The commonest species is the green eel (*Gymnothorax prasina*). The rivers furnish excellent species in *Anguilla reinhardti* and *A. australis*.

Jolly-tails (*Galaxias*), which are related distantly to the salmon of the northern hemisphere, abound in all the streams, and the Australian grayling (*Prototroctes marana*) is found in some of the southern rivers. The sergeant baker (*Aulopus purpurissatus*) is a valuable food-fish, and the cucumber-fish (*Chlorophthalmus nigripinnis*) has been added to the menu by the trawl. The flute-mouths (*Fistulariidae*), bellows-fish (*Macrorhamphosidae*), pipe-fishes and sea-horses (*Syngnathidae*), though extremely interesting on account of their quaint forms and odd habits, are not of economic value. The long toms (*Tylosurus*), and the garfishes (*Hemiramphus*) are among the most common food fishes of the coast, while flying-fishes (*Exocoetus*) are captured occasionally, and are excellent as food.

Only one member of the *Atherinidae* is used as food; the family *Mugilidae*, yields many species, the sea-mullet (*Mugil dobula*) being one of the most common market fishes. Then there are the pikes (*Sphyræna*) and a few fishes of the true cod-fish family (*Gadidae*), and the nannygai (*Beryx affinis*),

a choice fish, remarkable for its brilliant red colour. The black fish (*Girella tricuspidata*), and the drummer (*Vyphosus sydneyanus*), are caught commonly off the rocks; they are vegetable feeders, and require to be eaten soon after capture. The *Serranidæ* provides many valuable food-fishes, both marine and fresh water. The perch (*Percaletes colonorum*), the Murray cod (*Oligorus macquariensis*), black rock-cod (*Epinephelus dameli*), golden perch (*Plectroplites ambiguus*), and Macquarie perch (*Macquaria australasica*) are the best known species. The Murray cod reaches a weight of a hundred pounds. Another common member of the family is the wirrah (*Acanthistius serratus*), but it is not much esteemed. Four species of so-called whiting occur, the sand whiting (*Sillago ciliata*) being the best known. The jew-fish, and teraglin (*Scienidæ*), and the Australian salmon (*Arripis trutta*), are moderate table fishes, as are also some of the *Cheilodactylidæ*, which include the carp, morwong, and jackass fish. Of all Australian fishes, the snapper (*Pagrosomus auratus*) is the best known and most prized, not only for its edible properties, but also for sport. The black bream (*Chrysophrys australis*), is also a favourite. The red mullets (*Mulidæ*), though well flavoured, are not given a high place. The parrot fishes yield a fair proportion of table fishes, the principal being the pig-fishes (*Verreo*), the groppers (*Chærodon* and *Achærodus*), and several members of the genus *Pseudolabrus*, etc.

Among the *Carangidæ* may be mentioned the king and samson fishes (*Seriola*), large and powerful marine forms, the blue and the white trevallies (*Caranx*), and the yellow-tail (*Trachurus declivis*), caught usually for bait. The tailer (*Pomatomus saltatrix*), mackerel (*Scomber colias*), horse mackerel (*Sarda chilensis*), and barracouta (*Thyriscites atun*) are other well-known fishes.

The trawl secures the John Dory (*Zeus australis*) in some numbers, but this choice fish is not often offered for sale in the markets. The flat fishes are well represented, but, with a few exceptions, the supply is drawn largely from New Zealand and southern waters. The red rock-cod (*Scorpena cardinalis*) and its allies find a ready sale, also the flat-heads (*Platycephalidæ*) and gurnards (*Triglidæ*). The fish fauna of the State are very rich, and, including sharks and rays, number over 500 species.

#### BIRDS.

In New South Wales there is a great variety of beautiful birds, all the more important orders and families of the class Aves being represented. On the Australian continent and the adjacent islands about 800 species of birds have been discovered. Some are especially interesting, e.g., the Lyre-bird (*Menura superba*), the Satin Bower-bird (*Ptilonorhynchus violaceus*), the Fawn-breasted Bower-bird (*Chlamydodera cerviniventris*), and the Tooth-billed Bower-bird (*Scenopates dentirostris*); the Mallee-fowl or Mallee-bird (*Lipoa ocellata*), the Mound-building Brush-fowl (*Talegallus lathamii*), and the Collared Plain-wanderer (*Pedionomus torquatus*). Many of the Australian birds, besides being plumaged beautifully, are good songsters, and others possess remarkable powers of mimicry and ventriloquism.

The order *Accipitres* is well represented in New South Wales, twenty-six out of the twenty-eight species inhabiting Australia being found in the State. The largest of the birds of prey is the Wedge-tailed Eagle (*Aquila audax*). In many parts of the State this fine bird is included in the list of noxious birds, in consequence of the destruction which it causes amongst lambs, but in the dingo and rabbit-infested districts it is protected by land-owners on account of the effective service which it renders in keeping those pests in check. Another useful bird is the Black-breasted Kite (*Gypcoictinia melanosternon*), which frequents the inland districts; it destroys rabbits.

The White-bellied Sea Eagle (*Haliæetus leucogaster*), and the White-headed Osprey (*Pandion leucocephalus*) frequent the bays and inlets of the coast, and several species of hawks, eagles, harriers, kites, and a kestrel are found inland. The order *Striges*, or nocturnal birds of prey, is represented by eight species. Chief amongst these are the Great Owl of the brushes (*Athene strenua*) and the Sooty Owl (*Strix tenebricosa*), found in the coastal districts.

The order *Psittaci* is especially well represented, and includes many beautiful species of cockatoos, parrots, parakeets, and lorikeets. Among the larger species are the White and Black Cockatoos, yellow and red crested; and the Rose-breasted Galah. The sub-family *Platyercinæ* also is especially strong, some of the most notable members being Bourke's Rose-hill, and Barnard's Parakeets, the Ground Parakeet, and many other species, all plumaged gorgeously.

The order *Picariæ*, which embraces swifts, kingfishes, cuckoos, etc., includes one very remarkable species, viz., the Great Kingfisher, "Kookoo-burra," or Laughing-jackass, so called from its extraordinary mocking laugh. It is a most valuable bird, being the determined enemy and persistent destroyer of small reptiles, although occasionally it pounces upon chickens and small birds. The Tawny-shouldered Podargus (*Podargus strigoides*) is also a characteristic member of this order, which includes the Owlet Night-jar, and the Dollar-bird.

The *Passeres* is the largest order of birds in Australia; and the finest, if not the most beautiful family, is the *Menuridæ*. New South Wales possesses all three species of this remarkable Australian genus. They are to be found chiefly in the fern gullies and brush forests of the State. To this order belong also the crow-shrikes of the genera *Cracticus* and *Gymnorhina*, the Regent Bower-birds (*Sericulus melinus*), Whip Birds (*Psophodes crepitans*), Swallows, Martins, Diamond Birds, Fly-catchers, Fan-tails, Wedge-bills, Thick-heads, Robins—red-capped, red-breasted, and yellow; "Superb Warblers," Emu-wrens, Meadow Pipits, Bristle-birds; Finches; Pittas, Ground-thrushes, Bower-builders, Cat-birds, Rock-warblers, and Honey-eaters (*Meliphagidæ*). Worthily of special notice in this large order of birds are the Bower-builders, extraordinary birds, of which three species are found in this State. The brilliantly-plumaged Regent Bower-bird (*Sericulus melinus*), which forms the most primitive bower or playing-place, frequents the dense coastal brushes of the northern rivers; the Satin Bower-bird (*Ptilonorhynchus violaceus*) is found in the scrubs and mountain ranges of eastern New South Wales; and the Spotted Bower-bird (*Chlamydodera maculata*) inhabits the grassy plains and lightly-timbered country inland. Scattered about the entrances to the bowers of the last two species are pieces of bleached bone, land shells, bright feathers, bits of looking glass, coins, or any bright object which the birds may pick up in the bush.

The order *Columbæ* is represented largely, especially in the great primeval forests of the coast districts. In the cedar brushes of the Liverpool Range the White-headed Fruit Pigeon may be found; and the Top-knot and Large-tailed Pigeons, and the Wonga-wonga (*Leucosarcia picata*), prized for its large size and the whiteness and delicacy of its flesh, are very plentiful in the brush forests of the Clarence, the Richmond, the Macleay, and Illawarra. The Bronze-winged Pigeon (*Phaps chalcoptera*) is common to almost all parts of the State. Several species of these birds are remarkable for their beautiful plumage, their size, and the excellence of their flesh. One of the finest species, the Partridge Bronze-winged Pigeon (*Geophaps scripta*), is found almost exclusively in the plains of the interior. Doves

also are numerous, and most of the species are delicately-coloured and beautiful. The little Turtle-dove of the inland districts (*Geopelia cuneata*) is the smallest species of this order.

The game birds found in the State belong to the orders *Gallinæ* and *Hemipodii*. The former is represented by the Wattled Talegallus (*Talegallus Lathamii*), found in the northern coastal scrubs and contiguous mountain ranges, and the Mallee-fowl (*Lipoa ocellata*), inhabiting the inland districts. Both of these birds belong to the family *Megapodidæ*; they are mound-raising birds, and deposit their eggs in a heap of leaves, decaying vegetable matter and sand. To this order also belong the Stubble Quail (*Coturnix pectoralis*), the Swamp Quail (*Synoicus australis*), and the King Quail (*Excalfatoria lineata*), the last-named species being probably the smallest game bird in the world. The order *Hemipodii*, which by some authorities is included in the *Gallinæ*, is represented by four species of Turnix, commonly known as quail, and the remarkable Collared Plain-wanderer (*Pedionomus torquatus*).

To the order *Alectorides* belong the well-known Australian Crane or "Native Companion," and the Australian Bustard, or Plain Turkey, the latter being much prized as an article of food.

Among others, the order *Steganopodes* is represented by the Pelican, Gannet, and different species of Cormorants. The order *Herodiones* includes the White Heron, Pacific Heron, and White-fronted Heron, Egrets, Ibises, and Spoonbills. In *Anseres* are found the Black Swan, Maned Goose, and many species of ducks. The order *Fulicariæ* is represented by the well-known Pectoral Rail, several species of Crake, the Australian Coot, and the *Porphyrio*, or "Red-bill." The large order *Limicolæ* includes the Oyster-catcher, different species of Plovers, Dotterels, Curlews, Sandpipers, Painted Snipe, and Latham's Snipe, the latter being a migrant from Japan, and eagerly sought by sportsmen. To the order *Gaviæ* belong many species of Tern frequenting our coasts, and the Silver Gull and the Pacific Gull numerous at times in Sydney Harbour. The order *Tubinares* is represented by several species of Petrels, Prions, and Albatrosses, and the order *Pygopodes* by three species of Grebe. The order *Casuarii* is represented by the Emu (*Dromaius novæ hollandiæ*), the largest bird in this part of the globe, which unfortunately, is being exterminated rapidly.

In addition to the birds mentioned above, there are others of less note, but numerous, and some are very beautiful.

#### MOLLUSCA.

Of local shell-fish, the first in economic interest is the oyster, of which two kinds occur on the coast of New South Wales—a large variety popularly known as the mud oyster; and a smaller sort, the rock oyster.

The mud oyster reaches at Sydney almost the northern limit of its range, but does not grow there as luxuriantly as in cooler climates. This oyster prefers deep and muddy places, where it may attain a length of 8 inches. It is not abundant, and seems to be approaching extinction.

Unlike the mud oyster, the rock oyster is well suited to cultivation. In Southern Queensland, favoured by more congenial climate, and extensive tracts of sheltered shoal water, the cultivation of this species has been most successful. The beds in Moreton Bay supply not only the local demand, but also help to meet the requirements of the southern capitals. Little is known about the habits of the rock oyster, except that they differ entirely from those of English and American oysters, but when accurate details of its mode of breeding shall have been ascertained by scientific research a great impetus will be given to the industry. Incidentally, it may be remarked that the English oyster may not be consumed in May, June, July, and August,

but the Pacific oyster is in season all the year round. Quantities of oysters are imported into the State, and it is evident that the local market will afford ample support to the cultivators of the bays and deltas of northern New South Wales. Floods and shifting sandbanks, and the depredations of boring worms and whelks are obstacles to success, but the small capital required and the quick returns are great advantages.

Quantities of spat are thrown off at various times, and especially heavy falls occur in the spring, after which the rocks between tide-marks may be covered with young shells of the size of a shilling. The great majority of these perish; the survivors reach maturity in about twelve months, and probably increase in size for two or three years. When adult, their length is about 3 inches. Typically, they have sharply-waved, black-purple edges; form and colour, however, are so altered by environment that specimens from different situations have been given different names. That they are really of the same kind is, however, proved by taking a young purple crumple-edged shell from a position on rocks washed by waves, and placing it on a zostera flat in calm water. Here it develops a large, thin, white, smooth shell; so that one shell may show one form at one end and another at the other, the line of junction marking the period of transference.

No shell-fish other than oysters is consumed regularly in New South Wales. Occasionally, however, there are exposed for sale at the Sydney fish-market the Whelk (*Potamides ebeninum*) and the Cockle (*Arca trapezia*) the former being cooked, and the latter eaten either cooked or raw. Both the Whelk and the Cockle are used as bait, but neither is like its English namesake. The Mutton Fish, or "Abalone" of Californian markets (*Haliotis naevosa*), is consumed by the Chinese, and it is said that they collect it for export. The "Ugarie," commonly miscalled by the Maori name of "Pipi" (*Donax deltoides*), is used frequently for bait, but rarely for food. Various Squid (*Sepia cultrata*, *S. nestus*, etc.) are used mainly as bait. The beaches of New South Wales are not rich in ornamental shells, but the exquisite "King-cockle" (*Trigonia Lamarekii*) from Sydney Harbour is rare and valuable.

Of pests in this division of natural history, the local species of ship-worm, the "Cobra," has wrought great damage amongst shipping, wharves, and piers. It is a larger and more destructive species than any occurring in European waters. In gardens, the common European Snail, the "Limagon" (*Helix aspersa*), prized by the French epicure, has obtained a firm footing, and ravages flowers and vegetables.

#### INSECTA AND ARACHNIDA.

This branch of native fauna is so vast that it is not possible, within the compass of a short article, to do it justice. Perhaps, one of the most interesting features in connection with Australian insect life is the fact that a number of endemic forest forms have become pests in gardens and orchards, and so are more or less familiar. To the cultivator, on the one hand, who has to rely upon his crops as a means of bread-winning, this is at times most serious, while to the amateur gardener it is frequently a cause of much vexation. Almost every order of the Insecta has contributed to this army of depredators. Beetles (*Coleoptera*), White Ants (*Termite*), Butterflies (*Rhopalocera*), Moths (*Heterocera*), Plant Bugs (*Hemiptera*), and Scale Insects (*Coecidae*), are some of the chief offenders. In addition to these, some insects have been introduced by the agency of commerce, and, finding themselves in a genial climate, with plenty of suitable food, and free—or almost so—from natural enemies, have become permanently established.



Therefore, the insect fauna is exceedingly rich, but nowhere within the State is it so profuse and varied as in the semi-tropical jungles of the northern river districts. There, throughout the greater part of the year, many insects are found that are charming as well as interesting to the naturalist.

The beetle tribe (*Coleoptera*) is one of the most numerous of the native fauna. In 1887 Mr. G. Masters completed his catalogue of the Australian species; and there are few enumerated therein that do not occur in New South Wales. This list contained upwards of 7,000 species, and since that date, a great number of new forms have been recorded and described. In the *Geodephaga*, or "Ground Beetles," over a thousand species are known. These are included in two families—the *Cicindelidæ* and *Carabidæ*. The former, known popularly as "Tiger Beetles," is the smaller family; many of the species are most brilliant, being endowed with bright metallic hues. The *Carabidæ* are mostly sombre insects, black predominating; a few, however, have brighter liveries. In this family is found great disparity in size; one species, *Hyperion schræteri*, often measures  $2\frac{1}{2}$  inches in length, whilst some of the pigmies are less than  $\frac{1}{16}$  of an inch. The most attractive beetles are the *Buprestidæ*, or "Flower Beetles." Some of these insects are large and bulky, some long and narrow, and some very small, the sizes ranging from about 2 inches in length to  $\frac{1}{8}$  of an inch. This family is popular wherever it occurs, owing to the almost uniform brilliance of its species. But it is not alone the brightness of their liveries which attracts; many of them display, in addition, a charming scheme of elytral ornamentation, and exquisite bodily form. Unquestionably the largest family in the *Coleoptera* is the *Curculionidæ*, or Weevils. This family, as a whole, is very destructive, and some of the species occurring in this State have a world-wide distribution. One of the commonest of the forest beetles is the big, clumsy Rutilid (*Anoplognathus viridianeus*), or "King Beetle," an insect noted for its bright golden livery. This species, and some of its congeners, known vernacularly as "The Prince," "The Washerwoman," and the "Commoner," frequent eucalypts and often defoliate them. Some graceful forms are found also amongst the *Lucanidæ*, or "Stag-horns," and the *Cerambycidæ*, or "Longicorns."

Amongst the *Rhopalocera*, or Butterflies, some charming insects occur in different parts of the State, and the northern tropical jungle is the home of some exceedingly handsome species, such as the huge and gorgeous "Bird-wing" (*Troides priamus* var. *richmondia*), and several charming *Papilios*. Some of the latter are found in many parts of the State, such as *Papilio sarpedon*, sometimes called the "Wanderer," and, in the northern districts, "Blue Fanny." *P. anactus* and *P. ægeus* are common in some districts, and destructive to the foliage of citrus trees. One of the commonest and hardiest of the butterflies is *Danaïda archippus*, of which the larvæ feed upon the cotton weed. This insect is known in Australia as the "Wanderer," but in America, the land of its forebears, it is called the "Monarch." Mr. G. A. Waterhouse, B.Sc., has catalogued this group of insects. There are, in Australia, about 330 species, most of which occur in New South Wales. A few moths, owing to their huge size, such as the *Leto stacyi* and *Zeuzera boisduvali*, attract attention wherever they occur; but generally the *Heterocera* are soberly tinted and are nightfliers, so that comparatively few are collected.

As regards the Spider group, which is really higher than the insects from a zoological point of view, there are an immense number of species, some of which are of uncanny appearance, some rather pretty and some really beautiful; but all are very interesting. There are quite a number

of "Trap-door" spiders (*Avicularidae*), whose subterranean tunnels and trap-door lids often excite curiosity. All trap-door spiders, however, do not make trap-door nests, and amongst these is one—*Phlogius crassipes*—which usually takes up its abode either in a fissure in the ground or in the decaying trunk of a tree; there is no lid to this spider's nest. It is one of the largest of the so-called trap-door spiders, and is provided with peculiar stridulating organs, with which it makes a singular squeaking noise, from which it is sometimes known as "The Whistling Spider." Arboreal spiders are common and varied, the forms of some being rather eccentric. This eccentricity of form, however, is an advantage to the animal, as a measure of protection. Some of them have their abdomens armed with sharp, strong spines, and are known to naturalists as *Gasteracantha*. Many arboreal spiders construct large orbicular webs, but others make irregular, complicated snares. The venomous spider *Latrodectus hasselti*, is to be avoided, although it is not so harmful as reported. This spider is a bright, satiny black, with a prominent deep red longitudinal band running down the middle of the upper surface of the abdomen. Some spiders secure a large measure of protection by assuming the appearance of dead leaves, twigs, and the excreta of birds. Finally, there are one or two spiders which deserve a passing notice—the "Flying Spiders" (*Saitis volans* and *S. splendens*). They are rather small, but very brilliant, being decorated with bright golden, metallic green, coppery, and crimson scales. The chief feature of interest, however, is their "flying" apparatus, which is a flattened lateral extension of the integument of the abdomen. This, when at rest, is folded round the body of the animal, but when leaping or "flying" is extended at right-angles from the sides of the abdomen. These spiders belong to the family *Salticidae*, and are usually found upon bushes.

#### CRUSTACEA.

The crustacean fauna of New South Wales is extremely rich in species, but only about twelve kinds are used as articles of diet. Six, which are fairly common and highly esteemed as food, are as follows:—

Common Swimming Crab (*Portunus pelagicus*, Linn.).—This is the commonest crab offered for sale in Sydney. It often attains a weight of 1 to 1½ lb., and always finds a ready sale. The principal supplies are obtained in Port Jackson and in Botany Bay. The shell or carapace of this species is very broad, and ornamented on the front edge with twenty-four well-defined spines. Six of these are situated between the eyes, and nine on each side, the last being produced, and much larger than the others.

Swimming Crab (*Charybdis cruciata*, Herbst).—This species is not common, although large numbers may be obtained during some months of the year. It attains a size slightly larger than the preceding species. The claws are shorter, stouter, and the spines on the arms large, compressed, and tooth-like. The front edge of the shell is armed with twenty spines—six on each side, of which the majority are pointed, and eight, which are blunt, between the eyes. The colour of the adult is reddish, with yellowish spots and bands, of which the middle band represents a cross.

Mangrove Crab (*Scylla serrata*, Forsk.).—This is the largest and most valuable swimming crab obtained on the coast. The main supplies are obtained from Botany Bay, but it is not common. In this species the claws are very large; the front edge of the shell is armed with twenty-four nearly equal spines, the six between the eyes being blunter than the others; the back of the shell is convex and smooth. The colour of the Mangrove Crab, when alive, is olive-brown. It inhabits deep holes in the mud, and comes out at low tide to feed.

Sydney Craw-fish (*Jasus hügelii*, Heller).—The craw-fish, or lobster, as it is usually called, is very abundant along the whole coastline, but the chief supplies are obtained at Port Stephens. It is by far the largest and most valuable of the crustaceans of New South Wales, often attaining to 8 or 10 lb. in weight.

The "Southern Craw-fish" (*Jasus lalandii*, Lamck.) is often offered for sale. It is equal to the Sydney Craw-fish as an article of food, although usually much smaller. It may readily be distinguished by the highly-sculptured segments of the abdomen, and by the numerous hairs surrounding the bases of the spines on the carapace.

River Cray-fish (*Astacopsis serratus*, Shaw).—The Cray-fish is seldom offered for sale in Sydney, but it is used as food along the banks of the inland rivers. These crustaceans often attain to a foot or more in length, and are prized highly in the winter season, when they are in their best condition.

King Prawn (*Penæus canaliculatus*, Oliver).—The King Prawn is obtained in large quantities during the greater part of the year, but in mid-winter there is usually a falling-off in the supply, and prices rise accordingly. In addition to the demand for consumption as food, this prawn is much used as a bait, and in times of scarcity the prices are very high. Large specimens often reach 8 or 9 inches in length. The principal supplies are obtained in Port Jackson, Botany Bay, and Cape Hawke. The species may be recognised by the deep grooves which extend along each side of the beak or rostrum to the hinder margin of the carapace, and by the rostrum, which is armed above with ten or eleven spines and with one below.

Tiger Prawn (*Penæus monodon*, Fabr.).—The Tiger Prawn is a species which appears to frequent the coast at irregular intervals. Occasionally it is captured in abundance in Port Jackson and Botany Bay. It attains a larger size than either of the other forms mentioned, and has been recorded as reaching a length of 12½ inches. The species may be identified readily by the numerous dark-coloured cross-bands on the body and by the rostrum or beak, which has six or seven teeth above and three or four below.

River Prawn (*Metapenæus macleayi*, Haswell).—The School Prawn is not so large as the two preceding species, seldom exceeding 4 or 5 inches in length. It is, however, very abundant, and appears to be obtainable during the whole of the year. The rostrum of this species has five or six teeth above, but none below—a characteristic which enables it to be easily distinguished from other forms.

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# FLORA.

## NOTES ON THE MORE IMPORTANT PLANTS.

(By J. H. MAIDEN, F.R.S., Government Botanist.)

THE botanical conditions of New South Wales are largely comparable with those of Queensland. The climatic factors vary from temperate to sub-tropical.

The surface consists of the rich coastal belt, then the elevated tablelands which fall away to the western plains, which are barren only when no rain falls. The coastal belt, and gullies running into the ranges and tablelands produce many "brush" timbers, at the same time supporting various types of open forest; the western slopes and plains produce valuable small trees acclimatised to regions of low rainfall.

New South Wales joins with Queensland in brush vegetation; with Victoria and Tasmania as regards alpine plants; in the western slopes and wide western plains with Western Australia and the rest of the continent in a share of the true Australian indigenous flora.

A very brief statement may be made in regard to the endemic flora of the parent State, the term, endemism, being used with a qualification, for every year are found important additions to the reputed habitats of plants.

The endemic flora of New South Wales include two species of *Streptothamus* (Flacourtiaceæ), both climbing plants from the northern rivers, a few bipinnate *Acacias*, and a few *Eucalypts*.

In the Saxifragæ is the important genus *Ceratopetalum*, comprising two handsome coastal trees, the flowers of "Christmas-tree or Bush" (*C. gummiferum*, Sm.) being especially beautiful; also *Acrophyllum venosum*, Benth., a charming shrub of the Blue Mountains.

Amongst the Proteaceæ are the small genus *Symphyonema*, the only *Lambertia* out of Western Australia, and a number of *Grevilleas*, the handsomest of the *Telopeas* (*T. speciosissima*, R. Br., the Waratah); a few Goodeniaceæ and Compositæ, some *Prostantheras*, a few *Styphelias*, *Leucopogons*, and *Epacris*; some of the smaller species of *Macrozamia*; amongst orchids, one or two each of *Dendrobium*, *Sarcochilus*, *Diuris*, *Prasophyllum*, and *Pterostylis*.

Further, a *Hæmodorum* (Hæmadoraceæ). In the Liliaceæ, a couple of *Blandfordias*, an *Allania*, a *Xerotes*, and a *Xanthorrhæa*. Amongst the Restionaceæ, a *Leyprodia* and a *Restio*; and in the Cyperaceæ, a small number of species of *Cyperus*, *Scirpus*, *Schænus*, and *Gahnia*; also a few grasses.

In the south coast district are arborescent Rubiaceæ (*Coprosma* and *Canthium*), arborescent Compositæ (*Aster argophyllus*, Labill., *Bedfordia salicina*, DC., etc.).

In the northern portion of the coastal strip are found arborescent baccate Myrtaceæ (*Eugenia*, etc.), arborescent Proteaceæ, *Brachychiton*, *Laportea*, etc., with *Diploglottis Cunninghami*, Hook. f., *Panax elegans*, F. v. M., and *Archontophoenix Cunninghami* (Bangalow), lifting their graceful heads amongst the surrounding vegetation.

The coastal strip has or had trees which, although not the highest, may be regarded as the bulkiest of Australian trees, *Eucalyptus pilularis*, Sm., and *E. microcorys*, F. v. M., referred to on a later page.

The Cypress Pine forests of the western plains, and the Ironbark forests from Dubbo and north-eastward, are examples of pure gregarious forest. Cypress Pine and Box (*Eucalyptus hemiphloia* var. *albens*) are generally indicative of good wheat-growing land.

The RUTACEÆ are widely diffused in New South Wales, extending from the coast to the interior. The family consists mostly of floriferous shrubs, very decorative for gardens, and includes a number of trees, belonging to *Evodia*, *Acronychia*, and allied genera, found chiefly in the brush. The genus *Boronia* now consists of twenty species in New South Wales. *Eriostemon*, as defined by Mueller, includes such genera as *Crowea*, *Phebalium*, *Asterolasia*, but most botanists do not follow him in this. In this larger grouping we have a second genus of thirty-seven species, and no genus of Rutaceæ is diffused more evenly throughout the continent.

The STACKHOUSIACEÆ form an almost entirely Australian family of herbs usually quite small, *Stackhousia* being by far the most important genus. Eleven species have been described so far, well distributed throughout the State.

Of the RHAMNACEÆ, *Alphitonia excelsa*, Reiss., is a moderately abundant tree of the brush of New South Wales, with conspicuously pale undersides to the leaves, and bluish black fruits with reddish-brown seeds embedded in a brown powdery substance, and a remarkable timber of a pale colour which, on exposure to the light, very gradually assumes a rich red tint.

SAPINDACEÆ are fairly well developed in New South Wales. The genus *Dodonæa* (Hopbushes) occurs in every State, and extends from the coast to the interior. Most of the species are shrubs, and the Pinnatæ section comprises many beautiful ones. The genera *Atalaya*, *Alectryon*, *Cupaniopsis*, etc. (*Cupania*, *Nephelium*), are chiefly trees of the coastal brush; *Atalaya hemiglauca*, F. v. M., the Whitewood, is an important inland tree.

The LEGUMINOSÆ stands at the head of Australian families, with nearly 1,300 species in the continent, and the number is steadily being augmented. The family includes a very large number of species with ornamental flowers, which make gay the Australian bush.

In the section PAPILIONACEÆ the genera *Neptunia*, *Bauhinia*, *Petalostylis*, *Cæsalpinia*, *Mezoneurum*, *Barklya*, *Castanospermum*, *Sophora*, *Oxylobium*, *Chorizema*, *Gompholobium*, *Jacksonia*, *Sphærolobium*, *Pultenea*, *Daviesia*, *Gastrolobium*, *Dillwynia*, *Indigofera*, *Swainsona*, *Rhynchosia* are important. Not many trees are included in this section; one of them, the gorgeous *Erythrina vespertilio*, Benth., the Batswing Coral, with beautiful crimson flowers and cuneate leaves, is found in the warmer parts of the continent.

Of the section CÆSALPINEÆ the most important genus is *Cassia* (sixteen species), for the greater part yellow flowering, and mostly shrubs, an exception being the moderate-sized tree (*C. Brewsteri*, F. v. M.), which bears trusses of most beautiful colour varying from yellow to orange and red. Most of the species prefer the dry country, only a few being found on the coast.

The section MIMOSEÆ is almost entirely taken up with the genus *Acacia*, by far the largest genus in Australia, nearly 500 species having been described to date. It is divided into two grand sections, the Phyllodineæ, the leaves mostly phyllodinous without leaflets, and the Bipinnatæ, with bipinnate leaves. The latter section has only a few species, the majority falling into the Phyllodineæ, which is almost entirely Australian, a few other species belonging to this section occurring in India, Malaysia, and the Pacific Islands.

*Acacias* are known in Australia as Wattle, or prefaced by adjectives, such as Silver, Golden, Black, Green; they bear also such names as Myall, Boree, Mulga, Brigalow, Cooba, Dead Finish, Gidgee, Hickory,

Umbrella Bush, Wait-a-while, and Yarran, some of which distinguish the species. The wattle has been adopted as the unofficial floral emblem of Australia; it is represented on the national coat of arms, on postal notes, and on postage stamps, and it is used in a variety of ways for decorative purposes. The genus is found in every State, from the coast to the arid interior, in swamps and on the dry sides of mountains, by the banks of rivers, and on the dry plains. They vary in size from 3 or 4 inches in height; most are shrubs of a few feet, while many are small trees, but some are trees of great size, i.e., 100 or 150 feet. Some wattles are of economic importance for tan-bark or timber.

Very few small leguminous forage plants are indigenous, but the introduced medicagos (*Trefoils*) and clovers (*Trifoliums*) are established thoroughly in the wheat-growing districts, and provide most of the feed in winter and spring.

The MYRTACEÆ come second in point of number of species, about 900 having been described so far; the family includes two very large genera, *Eucalyptus* with over 300 species, and *Melaleuca*, with 112. These belong to the tribe Leptospermæ (capsular, and entirely or chiefly Australian). The tribe Chamælauciæ has a dry, indehiscent one-seeded fruit, while the third tribe, the Myrtææ, has an indehiscent berry or drupe. The vast majority of plants belonging to the family are worthy of cultivation on account of the beauty of their flowers, or of the neatness of the foliage or the shapeliness of the tree or shrub, or for timber or essential oil.

Tribe *Leptospermæ*.—The genus *Bæckia* is not met with frequently, particularly as the Queensland and Victorian borders are approached. *Agonis* is western, with two eastern species. The important genera *Leptospermum*, *Kunzea*, and *Melaleuca* (all called Tea-trees, though often shrubs) are well diffused throughout the States, and *Callistemon* (one of the groups of plants called Bottle-brushes) is mainly eastern. The genus *Eucalyptus* will be referred to separately. The important genera *Tristania* (Brush Box), *Syncarpia* (Turpentine), *Backhousia* are notable if only from the fact that they are exclusively eastern, and mostly denizens of the brushes.

The genus *Eucalyptus*, which comprises over 300 species, comes second only to *Acacia* in point of number amongst Australian genera, but it is so widespread and so abundant, that it is doubtless the most numerous in individuals. It is easily recognised by the operculum of the flower-bud.

The vast majority of flowers of *Eucalyptus* have white or cream-coloured filaments; those with very showy crimson or scarlet or yellow filaments are almost entirely confined to western and tropical Australia. In eastern Australia *E. sideroxylon*, A. Cunn., an Ironbark, very commonly has individual trees with pink or crimson filaments; such variation in coloration has been observed in a number of species, but it is rare.

The formation of adventitious shoots or "suckers," as they are called in Australia, is well known in Europe because of the difference between their appearance and that of the normal foliage. In Australian forests the phenomenon is more noticeable, partly because there is so much primeval forest, partly because the extensive destruction of forest for arable or pastoral land is a matter of every-day occurrence, and partly because the contrast between sucker-leaves and normal-leaves is, as a general rule, greater than it is in Europe.

These suckers are the curse of the pastoralist, who destroys the trees by ringbarking, to be followed by clearing or not, and, as a rule, treats every species of *Eucalyptus* (the predominant arboreal vegetation) indiscriminately, and without regard for the season of the year. This empiricism often results in vigorous second growths. In recent years, some attention has been given, by the most intelligent land-owners, to physiological principles, and the

ringing is done when the tree is in full flush of leaves or in flower. Experiments are being conducted in the poisoning of trees by treating the rung surface with arsenic.

The barks of Eucalyptus trees vary greatly, but, being easily seen from a distance, they afford a ready diagnostic aid to classification of groups and even to determination of species. The variation is so great that these field observations require care in application. The usual or most elementary kind of bark is the smooth one, called the "Gum"; it is more or less glaucous, and more or less thick. This bark, *e.g.*, White Gum (*E. hæmastoma*, Sm.), Red Gum (*E. rostrata*, Schlecht) is found in all districts from the sandy coastal flats to the bleak swamps and mountain areas and in the arid interior. In the interior it is the prevalent kind of bark, with more or less (generally not very much) blackish or hard scaly or flaky-fibrous bark at the butt. Barks with smooth surfaces, *e.g.*, Grey Gum (*E. punctata*, DC., *E. tereticornis*, Sm.), however, exfoliate usually in patches, then the exposed surface becomes harder, and exfoliates in its turn. Thus there is a constant renewal of the bark of a smooth tree, and in this way the bark grows and provides for the gradually increasing diameter of the stem. In some cases the patches are long and the older bark contains more fibre, with sufficient tenacity to form long ribbons, *e.g.*, Ribbony Gums (*E. viminalis*, Labill.). These are commonly found in the cooler tablelands of the southern and eastern States, and, when rendered supple by the rain and blown about by a strong wind, they stand out like the arms of a semaphore.

There is also that form of bark which is scaly all over the trunk, a form usually associated with the so-called Bloodwoods, *e.g.*, *E. corymbosa*, Sm. (heavy red-kino producers), which are found usually in sterile sandstone areas from the coast to the interior.

The bark may develop along two directions, one, such as is found in the Stringybark, which has a thick fibrous covering, with the fibres set longitudinally; the other, as in the case of the Box or Apple-bark, in which the fibre may be more compact or felted (*e.g.*, *E. hemiphloia*, F. v. M., *E. Stuartiana*, F. v. M.). If the fibrous bark be thinner and looser, it is often termed Peppermint (*e.g.*, *E. piperita*, Sm., *E. radiata*, Sieb.), and there are transitions, on the other hand, to the Ribbony Gums.

There is also a very hard furrowed bark, often black from age, known as Ironbark, the evolution of which Augustus Oldfield many years ago attributed to the longitudinal cracking of the bark accompanied by the matting caused by the discharge of a large amount of astringent exudation.

Amongst the types briefly defined there are many intermediate forms. The nomenclature of the different kinds of trees is not uniform; for example, the term Box, arising primarily from a tough interlocked timber, is often applied to a timber of such a class, irrespective as to whether it has the type of bark of the *E. hemiphloia*, F. v. M. (the original Australian Box). It may be applied also to trees with an almost ribbony bark. Very few barks are entirely smooth, and they are inclined to be thick and juicy; the character of the bark is probably a protective adaption against bush-fires. As the tropics are approached, the tendency of all Eucalypts is to have a smooth bark, with a little scaly bark at the butt.

As regards colour the timbers may be divided roughly into red, brown, and pale. Red timbers may be found both in the interior (*e.g.*, *E. rostrata*, Schlecht., *E. microtheca*, F. v. M.), or in the comparatively well-watered coastal districts (*E. marginata*, Sm., *E. resinifera*, Sm., *E. saligna*, Sm.). The pale timber (*e.g.*, *E. pilularis*, Sm., *E. microcorys*, F. v. M.) is found mainly in well-watered districts.

Most timbers are more or less interlocked, the Ironbarks affording an extreme case, but a few are fissile, of which the Gippsland Mountain Ash (*E. regnans*, F. v. M.) is a type.

Mallee is the term employed formerly to denote shrubby Eucalypts with a thickened root-stock from which many stems spring; the term now is applied frequently to species without the thickened root-stock. Gum scrub species very seldom attain the dignity of a tree from which timber may be cut.

*E. rostrata*, Schlecht, is probably the most widely diffused. It is moisture-loving, and follows the course of streams, or may be found in depressions in which the rain may find its way to the subjacent strata.

Tribe *Myrtaceæ*.—This group is entirely eastern, and with one solitary exception (*Eugenia Smithii*, Poir., the "Lilly Pilly"), which extends to Victoria, belongs to New South Wales and Queensland. With hardly an exception, the whole tribe is found in brush, and its members are called by the name of Myrtles, much more often than the remainder of the *Myrtaceæ*. *Eugenia* is by far the most important genus, and it includes a number of medium-sized or large trees, often planted for ornament on account of their symmetry, the dainty colouring of their young foliage, the beauty of their abundant fruit, and the neatness of their (usually) white flowers. *Myrtus* is a beautiful and important genus of shrubs and trees. *Rhodomyrtus* is of less importance, while the handsome *Barringtonias* are mainly tropical.

UMBELLIFERÆ form a valuable constituent of the vegetation of Australia. *Hydrocotyle* is the largest genus (thirty-two species), and all are endemic but two; it is widely diffused. *Didiscus* (twenty-six species) is exclusively Australian and well diffused throughout the States. *Trachymene* (*Siebera*) is practically endemic, and has thirty Australian species, mainly western, but with a noticeable eastern (New South Wales and Queensland) representation. *Xanthosia* is an endemic genus of not specially ornamental herbs, mainly, but by no means exclusively, occurring in Western Australia. *Actinotus* also is endemic; New South Wales has five species. *A. Helianthi*, Labill., is the well-known "Flannel Flower" of New South Wales.

The COMPOSITÆ take the fourth place in the flora of Australia, with 635 species. In the "Flora Australiensis," Bentham gave the number at nearly 500, arranged under eighty-eight genera, thirty-nine (of which eighteen were then monotypic) being endemic to Australia.

The principal Australian genera are *Aster*, *Helichrysum*, *Helipterum*, *Brachycome*, *Calotis*, *Podolepis*, *Angianthus*, *Gnephosis*, and *Senecio*.

It is not surprising, considering the facility (e.g., by means of pappuses) with which so many species are distributed, that there is less local distribution of Composites than in any other large family.

Some species, e.g., *Helichrysum*, *Helipterum*, *Waitzia*, *Cephalopterum*, are cultivated as "Everlastings"; others, e.g., *Aster*, *Humea*, *Ammobium*, *Senecio*, *Brachycome*, are herbs and shrubs capable of adorning the garden; while some are mere weeds.

The EPACRIDACEÆ flourish in profusion both as regards species and individuals. The two grand divisions into *Stypheliæ*, with indehiscent, usually drupaceous fruit, and the *Epacreæ*, with loculicidally dehiscent capsule, are sharply defined. Taking the genus *Styphelia*, it is a question of one large genus (193 species at present) or a number of genera as defined by Robert Brown and others, and approved by Bentham. It is admitted that these are species with intermediate characters, but the genera or subgenera have mostly such characteristic facies that it seems regrettable to abandon them. The position is summed up admirably by Bentham in the "Flora Australiensis," V, 145, and most field botanists will agree with him.



The genus *Leucopogon*, readily known by its small white flowers with bearded corolla lobes, is almost exclusively Australian. Most of the species are Western Australian, New South Wales coming next in order of number, but the genus is represented in all the States.

The original genus *Styphelia* ("Five Corners") has eleven species, chiefly New South Wales, and *Astroloma* has three species in this State. Space does not permit detailed reference to the remaining genera, except to say that when in fruit many of the shrubs look very beautiful. Some of the *Stypheliæ* in flower are very pretty.

The beauty of the section *Epacrea* rests mainly in its flowers, and the genus *Epacris* is pre-eminent in that respect. The genus is mostly east Australian, New South Wales having nineteen species. *Richea Gunnii*, Hook, a small shrub, is found in this State; also a species of *Dracophyllum*, which is smaller. The giant *D. Fitzgeraldi*, F. v. M., occurs in Lord Howe Island.

The SOLANACEÆ are represented chiefly in Australia by the genera *Solanum* and *Anthocercis*; while the principal masticatory of the aborigines is *Duboisia Hopwoodii*, F. v. M., a shrub found only in the interior; there are three other species, two belonging to the brushes of the east coast. The genus *Solanum* is best developed in New South Wales and Queensland. *Anthocercis* is endemic and differs from *Duboisia* in having a capsular fruit; the genus has many representatives in New South Wales.

The MYOPORACEÆ form an almost entirely Australian family, the genus *Myoporum* being represented only to a small extent in the Indian Archipelago and the Pacific Islands, and by one species in tropical Africa. One Australian species (*M. tenuifolium*, G. Forst.) extends to New Caledonia. There are in all fifteen species, and they are well distributed throughout the States, *M. platycarpum*, R. Br., the "Sugar Tree," which often exudes a saccharine substance, being a well-known tree of the interior.

But the glory of the family is the genus *Eremophila* (including *Pholidia*). They are mainly Western and South Australian, but they have a very strong New South Wales contingent. They are essentially dry-country species, and are mostly of an ornamental character, bearing a profusion of flowers, varied and dainty in tint, but unfortunately the colour is lost in drying. They are shrubs varying in size.

The VERBENACEÆ are very interesting. The whole of the genera of the *Chloantheæ* are endemic. Of the other sections the *Lantana* (*L. Camara*, L.) is an introduced species, and its aggressiveness has caused great devastation in the eastern portion of the State. *Gmelina* has three species, and includes *G. Leichhardtii*, F. v. M., a beautiful tree of the brushes of New South Wales, which yields the especially valuable timber known as "Native Beech." *Avicennia officinalis*, L., widely distributed in other parts of the world, is known here as "White Mangrove," and encircles the Australian coast.

Of the LABIATÆ, the genera of the well-marked tribe *Prostantheræ* alone are endemic of the five genera which compose it. *Prostanthera* is by far the most important, followed by *Hemigenia* (including *Hemiandra*), *Microcorys*, and *Westringia*. As regards *Prostanthera*, the preponderance of species (thirty-three) is in New South Wales. With the prevailing colour of the flowers purple or purplish, some of the species are singularly floriferous and beautiful. The lovely *P. Sieberi*, Benth., of eastern New South Wales may be cited; also *P. lasianthos*, Labill., "Mint Bush," a tall shrub which lines water-courses in most of the States.

*Hemigenia* is mainly Western Australian, though New South Wales has two species. *Westringia* is distributed more evenly; New South Wales has six species.

The family SALSOLACEÆ is diffused so widely and of such high economic importance to pastoralists, that we are apt to look upon it as more Australian than it is. Some of the principal genera are not endemic in Australia, e.g., *Chenopodium*, *Atriplex*, *Kochia*, but they are richly represented by endemic species, while the number of individuals is very great, "Salt bush" being the characteristic vegetation of enormous areas. While the genera are well distributed throughout the States, they are indicative of salinity, and are most commonly found in regions of low rainfall or in proximity to the sea. Salt bushes combined with native grasses provide an excellent mixture for merino sheep, and undoubtedly improve the texture of the wool.

The genus *Phytolus* (*Trichinium*) is an extensive and purely Australian genus of AMARANTACEÆ, usually, but not exclusively, occurring in regions of low rainfall. The flowers are in dense cylindroid spikes, usually pink, purple, or yellowish, and often known as "Silky-heads." The individuals are often gregarious, covering large areas with a bright colouring.

The PROTEACEÆ form the third in order of abundance of species in Australia, distributed over thirty-four genera, some of the principal being *Grevillea*, *Hakea*, *Persoonia*, *Banksia*. Every tribe is found in Australia, which is the chief seat of the family, although it is well represented in South Africa.

*Hicksbeachia*, *Helicia*, *Macadamia*, *Strangea*, *Stenocarpus*, *Embothrium* are confined to the brushes of New South Wales and Queensland.

The genera *Isopogon*, *Persoonia*, *Grevillea*, *Hakea*, *Banksia* occur in every State, while *Grevillea* and *Persoonia* are the only genera in which any State has more species than Western Australia; the numbers being *Grevillea*—New South Wales, 77; Western Australia, 70; and *Persoonia*—New South Wales, 32; and Western Australia, 25. *Lambertia* shows the peculiar distribution of Western Australia, 7; and New South Wales, 1.

The copious woodiness of the follicle is observed in many genera of Proteaceæ, e.g., *Hakea* and *Xylomelum*; in the latter genus it is so pronounced as to earn for it the name of "Wooden Pear"; this protection to the seeds is doubtless an adaptation in view of the frequent burning off which falls to the lot of Proteaceous shrubs.

It is only in the brushes of New South Wales and Queensland that the Proteaceæ attain their largest development, *Macadamia ternifolia*, F. v. M. (yielding an excellent edible nut); *Orites excelsa*, R. Br., and *Grevillea robusta*, A. Cunn. (both "Silky Oaks"); *Stenocarpus sinuatus*, Endl. (the "Firetree") and *S. salignus*, R. Br. (Red Silky Oak); *Embothrium Wickhami*, Hill and F. v. M.; *Buckinghamia celsissima*, F. v. M., *Cardwellia sublimis*, F. v. M., and a few others attaining the magnitude of first-class trees.

Hundreds of species of Proteaceæ are well worthy of cultivation. Amongst the very great number of beautiful shrubs, the gorgeous *Telopea speciosissima*, R. Br., or "Waratah," stands pre-eminent. Of the trees, *Grevillea robusta*, A. Cunn., and *Stenocarpus sinuatus*, Endl., are, perhaps, seen most frequently in gardens, but there is a wonderful and beautiful collection to choose from. Many of the shrubs have charming "cut leaved" foliage, and are worthy of attention for that characteristic alone. Many of the *Banksias* ("Bottlebrushes") are delightful plants, often bizarre.

The THYMELACEÆ are represented almost exclusively by the Australian genus *Pimelea*, of which there are seventy-six species, fairly well distributed throughout the States. They are usually small plants and not particularly ornamental, but some may be classed as such, especially the showy Queensland *P. hæmatostachya*, F. v. M. The bark is fibrous and very tough, and

that obtained from the larger species was formerly used by the aborigines for making little bags.

Turning to the SANTALACEÆ, *Exocarpus* includes the "Native Cherry," which has won so much renown through having "the stone outside the fruit," *E. cupressiformis*, Labill., being the best known. The genus is distributed widely throughout Australia. It is root-parasitic like so many of its congeners, the family in this respect, as well as in floral characters, showing close affinity to the Loranthaceæ. *Leptomeria* ("Native Currant") and *Choretrum* are genera of erect leafless shrubs, the former more western and the latter more eastern in its distribution. The well-known Quandong is *Fusanus acuminatus*, R. Br. Both genera extend to eastern Australia, but they are essentially plants of low rainfall.

The CASUARINACEÆ are known as Oaks or She-oaks in Australia, some are widely diffused, while a few are mostly eastern. Some are shrubs; in the dry country there are trees of medium size; in eastern Australia some species become very large. They occur in the desert, in dry rocky country, in saline soils both near the coast and inland, and the largest trees, River Oak (*C. Cunninghamiana*, Miq.), mark the courses of the eastern rivers.

The genus *Podocarpus*, called "Damsons" because of the enlarged succulent peduncle, comprises six species found in Australia, although the genus occurs also in South America and Eastern Asia. Five of the species are endemic, while one extends to Malaya. *P. elata*, R. Br., is the "She or Brown Pine," a large tree of New South Wales and Queensland. *P. spinulosa*, R. Br., is a bulky shrub of eastern New South Wales, and *P. alpina*, R. Br., is a straggling appressed shrub found on mountain tops in the Australian Alps.

Of the family PINACEÆ, the genus *Araucaria* has a fine commercial tree, viz., *A. Cunninghamii*, Ait., the "Hoop or White Pine," of the brush forest of Northern New South Wales and Queensland. *A. excelsa*, R. Br., the "Norfolk Island Pine," often planted in Australia, is not indigenous. Adventitious leaf or branch buds in the form of woody nodules, which are really abortive branches, are found in the bark of some trees, particularly those of certain *Araucarias*.

The genus *Callitris* is the most abundant pine in Australia. It contains fifteen species, and is found from Tasmania to the tropics, and from the sea coast to the arid interior. Sometimes these trees, called "Cypress Pines," are so abundant as to be looked upon as a pest. They are usually beautiful trees, sometimes bright green, and sometimes glaucous, and the species are determined largely by the shape of the cone. They occur chiefly in New South Wales and Queensland.

The CYCADACEÆ are represented in Australia by three genera, viz., *Macrozamia*, *Cycas*, and *Bowenia*. The first is by far the most abundant, and is developed chiefly in eastern New South Wales and Queensland. There are sixteen species, *M. spiralis*, Miq., occurring extensively both in southern and northern New South Wales; a number of forms, *M. Fawcetti*, *heteromera*, *cylindrica*, *secunda*, *flexuosa*, all named by C. Moore, were first brought under notice as horticultural varieties, but are good species. All are less robust than *M. spiralis*. *M. Perowskiana*, Miq., is a taller species, which occurs in the northern districts of the State. *Macrozamia*s are called "Burrawangs" in New South Wales.

The interest of the small family AMARYLLIDEE lies in four of its seven genera, *Doryanthes*, *Crinum*, *Calostemma*, and *Eurycles*.

Of *Doryanthes* there are two species, *D. excelsa*, Correa, and *D. Palmeri*, W. Hill; both are very large plants, with large sword-shaped leaves

and with very tall flowering stems and massive inflorescence. The former is from coastal New South Wales and Queensland; the latter, which is somewhat variable, is confined to southern Queensland. The flowers are crimson in colour. There is also a small and beautiful species of *Crinum*, viz., *C. flaccidum*, Herb., which is found in the interior of all the States except Tasmania. It has white flowers. The two species of *Calostemma*, *C. purpureum*, R. Br., and *C. luteum*, Sims, occur in the drier country. *Eurycles Cunninghamii*, Ait., is found in north coastal districts.

The Australian LILIACEÆ are very numerous, but only some of the more prominent genera can be taken notice of. *Blandfordia*, known as "Christmas Bells," comprises four species, three of which are found in coastal New South Wales. The flowers are reddish or reddish-brown or yellow, and very ornamental.

*Thysanotus* is the "Fringed Violet," because the flowers are of a violet colour, and fringed at the edges. They are small plants, with grass-like leaves. There are twenty-one species, of which four are found in New South Wales.

The genus *Xerotes* consists of thirty-seven species, rush-like plants, with small flowers usually dull-yellow, dioecious. *Xanthorrhæas* are the "grass trees" of eastern Australia, the "black-boys" of Western Australia, and the "Yuccas" of Kangaroo Island and part of South Australia. They have usually a caudex, showing the charred bases of the grass-like leaves, which form a tuft at the top. Each caudex is surmounted by a spear-like flowering spike. They exude a yellowish or reddish resin which was known formerly as "Gum accroides," and now as "Grass-tree Gum" or "Black-boy Gum." There are thirteen species, five occurring in New South Wales.

Of GRAMINEÆ, 433 species have been described to date, and many additional species will doubtless be brought under notice. From the economic point of view they are very important, for they are the stand-by of the flocks and herds of the continent. It is not possible to do justice to them in a brief sketch, nor is it possible to refer to the rich crop of aliens, purposely or accidentally introduced. There are seventy-eight indigenous genera; but only fourteen, comparatively small, are endemic. Taking them as a whole, the species are well diffused throughout the States.

Of *Panicum* there are seventy-five species; they are useful almost without exception. The long trailing *Spinifex* should not be confused with the "Spinifex" of bushmen, which is the name given to *Triodia*, mostly dense, hummocky, prickly species of the dry country. *Neurachne* is "Mulga Grass," because it is often found under Mulga (*Acacia aneura*, F. v. M.). Of *Andropogon* there are twenty-seven species, including some of the best fodder plants, such as "Blue Grass," e.g., *A. sericeus*, R. Br., and its allies. *Anthis-tiria ciliata*, L. f., is the well-known "Kangaroo Grass," *A. membranacea*, Lindl., "Flinders Grass," while *A. imberbis*, Retz., is called "Bundle Bundle" in Western Australia. *Aristida* with its characteristic trifid awn, has ten species, and is often called "Wire Grass." The inflorescence of *Stipa* is sometimes elegantly plumose (particularly *S. elegantissima*, Labill.), while the hardened tip of the flowering glume enclosing the grain, aided by the twisted awn, bores into the flesh of animals, hence they are called "Spear Grasses." Certain species become obnoxious to the pastoralist, but all yield useful feed when young.

Several species of *Danthonia* are found, some of the best being *D. caespitosa*, Lab., *D. pilosa*, R. Br., *D. semi-annularis*, R. Br., *D. carphoides*, F. v. M., and *D. racemosa*, F. v. M. The *Danthonias* are amongst the most persistent of the native grasses, and provide excellent feed for stock in the interior. *Astrebla* is a small genus, but its triticoid species are valuable

dry-country grasses and are called "Mitchell Grasses." *Cynodon dactylon*, L. C. Rich., is the "Couch Grass" of coastal New South Wales and Queensland, one of our most valuable grasses for pastures and for lawns; it is identical with the "Doub" of India and the "Bermuda Grass" of the United States.

There are thirteen species of *Poa*, some harsh and some succulent fodder grasses. The introduced *P. annua*, L., is complementary to *Cynodon dactylon*, since it takes its place every winter. *Eragrostis* claims twenty-eight species, all more or less valuable for sheep; some have an ornamental inflorescence, and some are bulbous, and are capable of great drought resistance.

*Stenotaphrum americanum*, Sch., is an American grass acclimatised in the coastal districts, it is known invariably as "Buffalo Grass," from the circumstance that, in the very early days, it was first observed near Sydney after the visit of an American ship "The Buffalo." It should, however, not be confused with the grass known in America as Buffalo (*Bouteloua*).

The Brazilian *Paspalum dilatatum*, Poir., and the South African *Chloris Gayana*, Kunth, have proved themselves valuable fodder grasses for dairy cattle. *Ammophila arundinacea*, Host., "Marram Grass," has proved an admirable sand stay.

Lianes, or vegetable ropes, are not unusual in the brushes, being generally the stem of a species of *Vitis*; these contain water, and the bushman cuts them into lengths and *more suo* obtains drinking-water from them. They grow in the warmer coastal brushes, where the rainfall is good, though running water may be some miles away.

In moderately dry and very dry country the aborigines, and the white men on occasion, dig up the roots of certain trees, and obtain drinking water therefrom. The trees usually employed are certain Mallees or dwarf Eucalyptus, particularly *E. dumosa*, A. Cunn, and *E. oleosa*, F. v. M., also *Hakea leucoptera*, F. v. M. (one of the needle-bushes).

#### *Some Problems of the Pastoral Industry.*

Australia is a great pastoral country, and, as in other countries, a small percentage of sheep and cattle is lost every year through eating certain plants. The matter is under investigation, and the following facts have been ascertained:—

1. Certain forage plants (grasses and others) contain cyanogenetic glucosides. Poisonous results take place at certain seasons of the year (though perhaps not every year), as regards the same plant in a given area.
2. A few plants contain saponins and even more virulent poisons, e.g., certain Leguminosæ (*Gastrolobium*, *Isotropis*, *Oxylobium*), particularly in Western Australia, although New South Wales also is troubled in this respect.
3. Some succulent plants, e.g., *Euphorbia Drummondii*, Boiss., are apparently responsible for many deaths among stock, but it has been shown that the cause of death is hoven, and that only tired and hungry animals, which eat immoderately, are affected by them.
4. Certain Leguminosæ (*Swainsona*) derange the nervous systems of stock eating them; the animals develop an inordinate appetite for the plants, eventually becoming so-called Pea-eaters, or Indigo-eaters, and absolutely useless to the owner, death finally supervening. The symptoms are analogous to those known as Lathyrism, Nenta, Loco disease, in other parts of the world.
5. The abundant Trefoil (*Medicago*) family is responsible for Trefoil dermatitis, a rather bad skin disease, amongst stock in the spring months.

The United States, South America, and South Africa have problems of a like nature before them, and the difficulty is not solved when the plant-culprit, be it poisonous or not, is detected. The problem to be solved is how to prevent the deaths of stock by applying either a preventive or an antidote. With large flocks and herds spread over large areas, individual treatment has special practical difficulties.

It is a very common and empirical practice to attribute the deaths of stock to poison plants. As a matter of fact, Australia appears to possess singularly few poison plants which are injurious to stock, or which contain active principles which may be utilized as drugs.

#### *Weed Legislation.*

As Australia becomes developed, there is an increasing tendency in all the States to extend local self-government, and coping with weeds becomes usually one of the functions of local bodies. The underlying idea is that local people know the plants which are most noxious to them, and the function of the State Government is indorsement of their recommendations for proscription of specific weeds, subject to power of veto. This affords the necessary Government control, preventing local bodies, which may not have special knowledge, taking action prejudicial to their own interests.

The Pest Prickly Pear (*Opuntia inermis*) is dealt with by special legislation, both in New South Wales and Queensland.

Under the Federal Quarantine Act, 1908-20, the introduction is prohibited of plants affected by certain diseases (caused chiefly by fungi), which mostly affect economic plants. The importation of certain weeds also is prohibited, but they are already firmly established in the Commonwealth, some being very widely diffused. The object of the legislation is to put difficulties in the way of the importation of known pests into clean areas, the destruction of weed pests in the Commonwealth being a function of the State authorities.

In New South Wales, legislation was passed recently to prescribe a standard of purity and vitality in respect of agricultural seeds sold by seedsmen.

Many of the Australian weeds were introduced into the country in the first years of settlement. They came from Britain in the packing of goods carried by the first fleet, from Rio de Janeiro, the Cape, and Calcutta, the two former being ports of call on the outward voyage, and the two latter being visited from Sydney for food supplies. In later years, a trade in horses with Chilian ports was responsible for the introduction of such plants as *Xanthium spinosum*, the so-called Bathurst Burr.

As time went by, no restriction of any kind was placed on the introduction of plants, and gradually the varieties of weeds increased to the present formidable extent, and, being let loose on a virgin continent, brought about unexpected results.

The importation of enormous fodder supplies during periods of drought has been a prolific source of introduction of weed seeds, not only from various parts of the continent enjoying a good season, but also from beyond seas. All the States contain large areas of unalienated lands, where weeds are allowed to flourish to the detriment of adjoining holdings. With an increase of population, this difficulty will be overcome.

*Prickly Pear.*—The spread of the pest known as Prickly Pear, as in the valley of the Hunter and north-western New South Wales and Queensland, is one of the most remarkable instances of plant-aggressiveness known in any part of the world. A form of *Opuntia inermis*, P. DC., has already devastated these two States to such an extent as to cause anxiety, for the efforts to stem its continuous advance have not met with much success.

In New South Wales there are about 3,500,000 acres of pear-infested country, and the cost of eradicating the pear is estimated to be twelve millions sterling. Improved methods of using poison spray can now be applied.

The pear does not attain its best development in the coastal districts, which have a comparatively high rainfall, and a fairly dense population. In the regions climatically suited to it, there are but few people, and in broken country it gets a practically impregnable hold. It is so tenacious of life, and so adapted to its environment, that so far no economical method of destruction has been discovered, and the difficulty of the problem is increased enormously by the fact that the sides and tops of hills, gullies, and other places which are rough and difficult of access, have to be left as breeding-places for the pest.

Less than a dozen species of *Opuntia* have escaped from cultivation and spread to any extent, but all the others put together have not spread so extensively as the species designated as Pest-pear.

Prickly pear was introduced to Australia (the number of species is unknown) from Rio de Janiero. Governor Phillip touched at that port of his outward voyage in 1789, and brought it as food for the cochineal insect he desired to introduce with the object of founding an industry.

*O. aurantiaca*, Gillies, is a small spiny species with brittle joints, which is spreading both in New South Wales and Queensland. Its brittleness and spininess combine to make it a plant to be dreaded. Under the name of "Jointed Cactus" it is rapidly becoming a formidable pest, which requires special attention, though it has not the special colonising power of the Pest-pear.

The Pest-pear has a partiality for good soil, and is far less formidable in appearance than some of the species. It is not tall, for the tall species have distinct and separate stems, while this species has ramifying stems hard to disentangle and get at; it has comparatively few spines, but its barbed spinules, which are produced abundantly, cause severe irritation in man and beast. In addition, it has a remarkable facility for reproduction, being propagated by birds and stock which eat the seeds, while every point or portion of one forms a new plant.

*Eichhornia speciosa*, Kunth, the so-called "Water Hyacinth," originally imported from Europe as an ornamental plant, has adapted itself readily to Australian conditions. From Northern New South Wales to Central Queensland, it is filling lagoons and clogging water-courses, inflicting very severe damage where fresh water for drinking purposes in lagoons and creeks is especially valuable, and causing interference to navigation even in fairly large rivers.

Some of our worst weeds include Bathurst Burr (*Xanthium spinosum*, L.), St. John's Wort (*Hypericum perforatum*), which occasions much concern in the south-eastern tableland and in the Mudgee district; Noogoora Burr (*X. strumarium*), Sweet Briar (*Rosa rubiginosa*, L.), Blackberry (*Rubus fruticosus*, L.), Lantana (*Lantana Camara*, L.), Prickly Pear (*Opuntia* spp.), Star Thistle (*Centaurea calcitrapa*, L.), and other species of *Centaurea*, Black Thistle (*Carduus lanceolatus*, L.), Cape Weed (*Cryptostemma calandulaceum*, R. Br.), Stinkwort (*Inula graveolens*, Desf.), Sorrel (*Rumex acetosella*, L.), Dock (*Rumex crispus*, L.), and other species, Purple-top (*Verbena bonariensis*, L.), and others, Corn Gromwell (*Lithospermum arvense*, L.), Yellow Poppy (*Argemone mexicana*, L.), Tree Tobacco (*Nicotiana glauca*, Grah.), Mallow Weed (*Modiola caroliniana*, L.), Thorn Apple (*Datura stramonium*, L.), Nut Grass (*Cyperus rotundus*, L.), Wild Oats (*Avena fatua*, L.).

*Destruction of Forests.*

The deliberate destruction has arisen from two causes—(1) the destruction of trees to convert them into timber; and (2) the destruction of trees and shrubs in the formation or improvement of pastoral and arable land. In (1) the requirements of engineering and mining works, building, fencing, furniture, etc., have to be provided for. Under (2) the burning-off has been incessant, but a fair percentage of dead timber has been converted into household fuel in the vicinity of towns.

The removal of the trees of a forest destroys the plant equilibrium, and interesting changes take place, particularly in the brush.

The compensating extent of natural re-afforestation is considerable, although sometimes overlooked. Some species, *e.g.*, *Eucalyptus pilularis*, Sm., the Blackbutt, re-afforest rapidly in forest land, and it is known that the seeds of forest trees, which pass through sheep and cattle, and are trampled into the soil, are responsible for the conversion of large areas of grass land into forest in the eastern States.

Some areas in New South Wales are being planted in a systematic manner, under the auspices of the Forestry Commission.

*Vernacular Names for Australian Plants.*

The person who complains (without qualification) of the confusion of common names applied to Australian plants, sometimes loses sight of the fact that Australia is as large as Europe, and that even in Europe the application of vernacular names to plants is often profuse and bewildering. The Briton, Greek, and Scandinavian have different languages, and their plant names are (like those of Australians) often uncertain and difficult of interchange. Our difficulties have arisen partly because the continent began to be settled only about a century and a third ago, and then by a handful of people, very few of whom were educated. They came to a continent whose flora was unknown, even to botanists, and, as they spread into new areas they gave similar names to trees which appeared to them to be similar, and which, in many cases, have only recently been shown to be different.

The predominant vegetation (*Eucalyptus*) has a very similar facies, and it is not surprising that the ordinary citizen has shown no greater knowledge of it than the botanist.

Then again the early colonists had a limited vernacular, because they could use only comparative terms while the plants of their native countries showed little similarity to those of Australia.

Even the aborigines were grouped into tribes with different languages, and in the comparatively few cases in which they had names for plants, these names did not pass current over large areas.

In some cases the aboriginal names have been adopted by the white population. Some attempt has been made to standardise the vernaculars for Australian plants, but the chief difficulty arises from the fact that most plant names are restricted to small areas. When the economic value of a certain plant becomes established, particularly when it is placed on the market, a common name is often given to it, and it becomes more or less standardised. However, with the spread of education, it is confidently expected that the use of botanical names, at least as to genus, will present fewer difficulties. But it must be borne in mind that the study of natural history has an attraction for only a limited portion of the population, while of the naturalists but few take special interest in plants, and fewer still in their vernacular nomenclature.



## POPULATION.

### EARLY ENUMERATIONS.

**I**N the early years of its existence satisfactory particulars of the population of the colony are not obtainable, for although frequent musters of the population took place during the first forty years, the first actual census of New South Wales was not taken until the year 1828.

The particulars elicited by these musters were scanty, and, notwithstanding heavy penalties were provided against defaulters, it is known that in most instances the enumerations were incomplete. However, the approximate population at the end of each year from 1788 is definitely ascertainable, and at quinquennial intervals from 1790 to 1825 may be stated as follows for the whole of the territory known as New South Wales, including Norfolk Island:—

Year.	Population.	Year.	Population.
1790 ...	2,800	1810 ...	10,100
1795 ...	4,500	1815 ...	13,300
1800 ...	6,200	1820 ...	25,300
1805 ...	7,400	1825 ...	33,500

In 1788, at the establishment of the colony by Governor Phillip, the population was 1,024.

After 1828 there was a rapid increase in population, induced by the steady development of the Colony, and by the expansion of settlement which followed the opening of the interior by exploration. A system of assisted immigration was introduced, and at the census of 1833 the population had increased to 60,794, an advance of 66 per cent. having occurred during the period of five years.

With the rapid expansion of settlement a great demand for labour was created, and the high rates of wages attracted many unassisted immigrants in the next twenty years. The most powerful factor in promoting development was, however, the discovery of rich goldfields in the early fifties.

Quinquennial enumerations of the population were made between 1828 and 1861. The results shown below are for the Colony of New South Wales within the boundaries existing at the time of taking the census, unless otherwise stated.

Date of Census.	Males.	Females.	Total.	Increase.		
				Number.	Per cent.	
1828—November ...	27,611	8,987	36,598	...	...	
1833—September 2 ...	44,644	16,150	60,794	24,196	66·1	
1836—September 2 ...	55,539	21,557	77,096	16,302	26·8	
1841—March 2 ...	87,298	43,558	130,856	53,760	69·7	
1846—March 2... ...	114,769	74,840	189,609	58,753	44·9	
1851—March 1 {	Incl. Victoria	155,845	112,499	268,344	78,735	41·5
	N.S.W. only	100,217	78,451	178,668	...	...
1856—March 1 {	Incl. Q'land	150,488	119,234	269,722	...	...
	N.S.W. only.	139,994	112,646	252,640	73,972	41·4

Victoria was founded in July, 1851, by the separation of the District of Port Phillip, with a population of 77,345, from New South Wales, and after the census year of 1856 there was yet another reduction in the territory of New South Wales by the separation of Queensland, in 1859, with a population of about 17,000.

#### CENSUS ENUMERATIONS, 1861-1921.

The successive censuses up to 1901 were taken under authority of the State Government, and latterly were more or less uniform with those of the other Australian States. On the establishment of the Commonwealth, the matter of census was adopted as a Federal function, and enumerations of population are now made under authority of the Federal Government, federal machinery being utilised to secure uniformity in all States.

With the exception of the territory ceded to the Commonwealth Government in 1911, New South Wales has occupied its present boundaries since 1859, and census particulars are available at regular decennial intervals since 1861. These particulars furnish a connected and accurate summary of the development of population since that date, and a survey of the growth of the total population is shown in the following table:—

Year.	Population.	Index Number of Population.	Increase in Population since previous Census.			Number of Persons per Square Mile.
			Numerical.	Proportion.	Average Annual Rate.	
1861	350,860	100	172,192*	per cent. 91.00	per cent. 6.98	1.12
1871	503,981	144	153,121	43.64	3.69	1.61
1881	751,468	214	247,487	49.11	4.08	2.41
1891	1,132,234	323	380,766	50.67	4.19	3.64
1901	1,359,133	387	226,899	20.04	1.84	4.38
1911	1,648,746	470	289,613	21.31	1.95	5.32
1921	2,101,292	599	452,546	27.45	2.46	6.79

\*Since 1851.

From this and the preceding table it is apparent that a very rapid growth of population proceeded between 1828 and 1891, and that this growth was especially great between 1851 and 1861, when the gold discoveries were attracting eager fortune-hunters from other parts of the world, many of whom remained as settlers. After the gold rushes had ceased, the increase of population proceeded at a steadier rate, but, though neither the average annual rate of increase nor the proportionate increase of that period was again equalled, the actual numerical expansion in later periods has been greater. Indeed, the lull which occurred in the growth of population during the sixties developed gradually into a period of increasingly rapid expansion after 1871, and the next twenty years were, from a relative point of view, a time of unexcelled development.

It is significant that this speedy development proceeded during a period of remarkably flourishing trade, and came to an end when the trade boom ended in the commercial crisis of the early nineties.

The next twenty years were a period of little progress in the development of population, the reasons being the commercial and industrial stagnation which followed the crisis of 1893, the migratory and other losses due to the

war in South Africa, the bad effects of the severe drought of 1902-3, and a more potent though, perhaps, subsidiary cause—the heavy decline in the birth-rate which lowered the rate of natural increase.

A new period of prosperity opened early in the twentieth century, and the full weight of this trade revival told in the period 1911 to 1921, when the tide of population turned more definitely in favour of the growth of the State. Despite the serious effects of the war in diminishing the birth-rate, in temporarily stopping immigration, and in causing an exodus of men of reproductive ages, many of whom did not return, and despite the smaller losses occasioned by the influenza epidemic of 1919, the period showed a greater relative expansion than either of its predecessors, and by far the greatest numerical increase on record.

During this period also the population of New South Wales increased at a faster average rate than that of any other State, and the consequently increased proportion of the population of the Commonwealth in New South Wales placed it in a position of greater relative importance.

The following statement shows the population of each State and Territory of the Commonwealth at the last two censuses in comparison, and the average annual rate of increase during the period. The figures are exclusive of aborigines of full blood.

State or Territory.	Census Population, 1911.	Census Population, 1921.	Proportion in Each State or Territory.		Average Annual Rate of Increase since Census, 1911.
			1911.	1921.	
			per cent.	per cent.	per cent.
New South Wales ...	1,646,734	2,099,763	36·96	38·67	2·46
Victoria ...	1,315,551	1,530,114	29·53	28·19	1·52
Queensland ...	605,813	755,573	13·60	13·92	2·23
South Australia ...	408,558	494,867	9·17	9·13	1·93
Western Australia ...	282,114	329,228	6·33	6·06	1·55
Tasmania ...	191,211	213,527	4·29	3·91	1·11
Northern Territory ...	3,310	3,734	0·08	0·07	1·21
Federal Capital Territory	1,714	2,572	0·04	0·05	4·14
Commonwealth ...	4,455,005	5,429,378	100·00	100·00	2·00

#### *Sources of Increase.*

The following statement shows the extent to which each source, natural increase and net immigration, has contributed to the growth of the population during the census periods since 1861; in calculating the increase from 1901 to 1921, the population of the Federal Capital Territory has been taken into consideration, and aborigines have been included.

Period.	Numerical Increase.			Average Annual Rate of Increase.		
	Natural.	Net Immi- gration.	Total.	Natural.	Net Immi- gration.	Total.
				per cent.	per cent.	per cent.
1861-71	106,077	47,044	153,121	2·68	1·27	3·69
1871-81	140,382	107,105	247,487	2·49	1·95	4·08
1881-91	211,301	169,465	380,766	2·51	2·05	4·19
1891-1901	226,676	223	226,899	1·84	Nil.	1·84
1901-11	247,865	41,748	289,613	1·69	0·30	1·95
1911-21	318,530	134,016	452,546	1·78	·78	2·46
1861-1921	1,250,831	499,601	1,750,432	2·14	0·59	2·71

The natural increase has been by far the greater cause of growth in the population and, as would be expected, has provided steadily increasing additions. The rate of natural increase has fluctuated with a falling tendency throughout the period, but a very sudden fall occurred after 1890 owing to the rapid decline in the birth-rate. Immigration has always been a subordinate cause of growth, but has intermittently provided considerable additions to the population, although over a period of sixty years, the net immigration amounts to only 499,601, or about two-sevenths of the total increase. Immigration proceeded rapidly until 1886, when it declined heavily, and did not revive until 1905, when the State reintroduced its policy of affording assistance to immigrants. Between the years 1892 and 1904, the State actually lost more than ten thousand inhabitants by net emigration. The rate of increase due to net immigration, measured in relation to population, has been very variable, and though considerable improvement is evident in the past thirty years, the rate is still much below that of former years.

It is probable that the last decennial period would have shown a very considerable improvement in all respects, had it not been for the unusual influences brought to bear by the war, and the epidemic of influenza in 1919.

The actual annual movement of population in New South Wales between the last two censuses was as follows:—

Year ended December—	Increase during Year.			Increase per cent. during Year.		
	Natural.	Net Immigration.	Total.	Natural.	Net Immigration.	Total.
1911	30,498	34,890	65,388	1.83	2.12	4.05
1912	33,107	51,874	84,981	1.94	3.05	4.99
1913	32,402	26,837	59,239	1.80	1.51	3.31
1914	34,838	1,323	36,161	1.89	.07	1.96
1915	33,275	(—) 20,193	13,082	1.76	(—) 1.07	.69
1916	32,221	(—) 41,006	(—) 8,785	1.70	(—) 2.16	(—) .46
1917	34,498	41	34,539	1.83	Nil.	1.83
1918	31,860	9,951	41,811	1.66	.52	2.18
1919	22,143	54,148	76,291	1.09	2.65	3.74
1920	33,013	20,129	53,142	1.58	.96	2.54

(—) Decrease.

This table reflects very clearly the effects of the war upon the growth of population. During the three years 1911 to 1913 natural and migratory causes combined to produce a growth which, in point of magnitude, was unprecedented and, in point of rate, was nearly as rapid as that of any similar period in the previous fifty years. The advent of war in 1914 caused a practical cessation of immigration in the latter part of the year, while at the same time the despatch of forces oversea caused a heavy drain of emigration, which increased during 1915 and 1916 so much as to cause a large excess of departures over arrivals. From 1917 to 1919 the return of troops caused an increasing flow of arrivals, and restored a temporarily absent element of population. In 1920 the last detachments of soldiers returned, and there was considerable immigration from other States. After

1914 the number of births annually diminished and the natural increase showed a considerable falling off, especially in 1919, when the epidemic of influenza caused heavy mortality.

A very large movement of population takes place each year into and out of New South Wales, but is due more to the migratory habits of a large section of the inhabitants and to the movements of tourists and business men than to immigration or emigration properly so-called.

The net immigration of New South Wales is the excess of arrivals in over departures from the State, and is the result principally of intercourse with oversea countries, though of recent years the greater part of the immigrants have come from or through other Australian States.

The interstate and oversea movement of people to and from New South Wales is shown in the following table:—

Year.	Arrivals in New South Wales.				Departures from New South Wales.			
	Interstate.		From other Countries.	Total.	Interstate.		To other Countries.	Total.
	By Land.	By Sea.			By Land.	By Sea.		
1911	184,625	71,262	70,405	326,292	183,391	66,922	41,089	291,402
1912	201,462	75,872	87,916	365,250	193,880	71,179	48,317	313,376
1913	213,130	71,490	75,259	359,879	213,557	63,923	50,562	333,042
1914	233,723	75,875	67,268	376,866	235,898	71,875	67,770	375,543
1915	249,854	65,736	45,939	361,529	244,543	58,811	78,368	381,722
1916	266,751	55,423	49,354	371,528	267,114	51,624	93,796	412,534
1917	234,673	40,095	35,063	309,831	224,029	36,587	49,174	309,790
1918	270,867	28,868	38,744	338,479	263,239	25,493	39,796	328,528
1919	220,765	19,498	93,276	333,539	218,696	17,191	43,504	279,391
1920	269,934	41,134	72,515	383,583	267,318	35,904	60,232	363,454

Of the total movement more than 75 per cent. is with other Australian States, and one-third of the movement with countries outside Australia is with New Zealand. The interstate movement over the past ten years has constituted the greater source of increase for, by this means, New South Wales has gained 74,863 inhabitants as against 63,131 from countries oversea.

#### *Assisted Immigration.*

Recognising the need of a more rapid increase in population, in order to develop the vast resources and latent wealth of the country, the State Government arranged in 1905 for the systematic advertisement in the United Kingdom of the advantages offered to immigrants. The cost of the passage to desirable settlers was partly paid by the Government; and residents of New South Wales were enabled to arrange, by nomination, assisted passages for relatives and friends.

Under an agreement with the States, the Federal Government co-operated in the scheme by undertaking the advertisement of the resources of Australia, while the selection of immigrants was conducted by the representatives of the individual States, which also arranged the assisted passages.

The number of persons assisted to immigrate since 1911 is shown hereunder.

Year.	Total Assisted Immigrants.			Nominated by Relatives or Friends in New South Wales (Included in Preceding).		
	Males.	Females.	Total.	Males.	Females.	Total.
1911	5,880	4,042	9,922	3,647	3,279	6,926
1912	8,361	6,595	14,956	5,205	5,477	10,682
1913	4,181	5,682	9,863	3,336	4,999	8,335
1914	2,463	3,161	5,624	1,574	2,440	4,014
1915	535	1,161	1,696	495	825	1,320
1916	185	470	655	184	395	579
1917	68	188	256	63	167	230
1918	31	168	199	31	168	199
1919	16	52	68	15	52	67
1920	1,526	1,743	3,269	1,335	1,380	2,715
1921	2,270	2,130	4,500	2,136	1,607	3,943

The immigrants arriving during the war period were principally dependents of persons already domiciled in the State. In 1919 suitable shipping space was taxed to its utmost capacity to provide transport for troops returning from the war, and, owing to the pressure of repatriation, conditions did not favour immigration. During 1920 and 1921 considerable numbers of Imperial ex-Service men were granted free passages by the Imperial Government, and many female domestic workers were granted assisted passages.

Full details relating to assisted immigration are shown in the chapter on Employment and Industrial Arbitration.

#### POPULATION IN INTERCENSAL YEARS.

Reliable estimates of the population are required during the intercensal periods for many purposes affecting the welfare of the community. Apart from its value as the standard by which other statistics are measured, the population is used as the basis of important political and financial arrangements between the Government of the Commonwealth and the individual States, as, for instance, in the distribution amongst the States of representation in the Federal Parliament, and in the determination of the amount of revenue to be paid back to each State by the Commonwealth.

The factors causing variations in the population, therefore, require that a careful system of observation and record be maintained whereby natural increase and net immigration may be gauged accurately. The compulsory registration of births and deaths ensures reliable information as to the natural increase, but, unfortunately, since the element of migration is extremely variable, the records of arrivals and departures are defective. The records of overland migration are not perfect, but show approximately the gain or loss in the population of the State across its borders. Records of migration by sea, are less reliable, as all departures are not recorded. The usual practice is to assume that arrivals, as recorded, are correct, and to add to the recorded departures, as an allowance for those unrecorded, a certain percentage based on the experience of the preceding intercensal period. This method is not altogether satisfactory, for when the census is taken it is found that the estimate differs more or less from the result of the census, and it becomes necessary to adjust the estimates for all the years between census enumerations. For the purpose of many calculations, such as rates of growth and per capita statements, it is necessary to know the average or mean population for each year, since, usually, a wide difference exists between the population at the beginning and the end of the year. Estimates of the population are therefore made quarterly, and a

mean is taken by adding the population at the beginning and end of the year to twice the population at the end of March, June, and September, and dividing the total by eight.

At different periods conferences of the Statisticians of the several States of the Commonwealth have been held for the purpose of devising a uniform method of estimating population, and satisfactory results have been achieved.

The estimated population at the end of the year and the mean population of New South Wales, including aborigines, for the last ten years, were as follow :—

Year.	Estimated Population at End of Year.			Mean Population.
	Males.	Females.	Total.	
1911	891,867	810,017	1,701,884*	1,665,423
1912	942,430	844,435	1,786,865	1,744,049
1913	973,860	872,244	1,846,104	1,820,051
1914	983,766	898,499	1,882,265	1,870,328
1915	974,038	921,309	1,895,347	1,890,961
1916	947,017	939,545	1,886,562	1,893,170
1917	960,981	960,120	1,921,101	1,904,815
1918	985,324	977,588	1,962,912	1,942,921
1919	1,042,566	996,637	2,039,203	2,000,078
1920	1,068,105	1,024,240	2,092,345	2,067,977

\* Exclusive of 1,724 persons, the population of the Federal Capital Territory, which has been excluded in all subsequent years.

#### SEX DISTRIBUTION.

As is the case in most of the younger countries, the population of New South Wales contains a surplus of males over females, but in older countries females are usually the more numerous.

The disparity in New South Wales is brought about by the operation of several factors. The early development of the colony depended on the pastoral and mining industries, and this, combined with its remoteness from the Old World, led to far greater immigration of men than of women, and even in recent years the predominance of males among immigrants has tended to perpetuate the disparity between the sexes.

On the other hand, despite the excess of male over female births, the higher rate of mortality among males renders the natural increase of females far greater than that of males. Thus, during the ten years, 1911 to 1920, the natural increase consisted of 149,149 males and 168,706 females. As a consequence the excess of males diminished and the diminution was hastened by the war. The distribution of the sexes at each census from 1861 to 1921 was as follows :—

Year.	Distribution of Population in Sexes.				Males per 100 Females.
	Males.	Females.	Proportion of Males.	Proportion of Females.	
			per cent.	per cent.	No.
1861	198,488	152,372	56·57	43·43	130
1871	275,551	228,430	54·67	45·33	121
1881	411,149	340,319	54·86	45·14	121
1891	612,562	519,672	54·14	45·86	118
1901	712,456	646,677	52·42	47·58	110
1911	858,850	789,896	52·09	47·91	109
1921	1,071,943	1,029,349	51·01	48·99	104

From 1871 to 1881 the proportion of males remained constant at about 55 per cent., but immigration was checked towards the end of the next decade, and in 1891 the proportion of males had decreased slightly. During the following period there was very little immigration, and by 1901 the difference between the sexes had become less than at any previous period, the proportion of males being 52·42 per cent., or 110 males to every 100 females. At the census of 1911 the percentages were approximately the same, as immigration had revived in 1905; but the census of 1921 showed a further pronounced approach to equality between the sexes.

#### DISTRIBUTION OF POPULATION.

The population of New South Wales is distributed in a rather remarkable manner. At the census of 1921 the city proper contained 110,896 persons in a small area surrounded by an extensive group of suburbs with 795,051 inhabitants, making a total of 905,947 dwellers in the metropolis. Then scattered throughout the State are 144 of the larger towns incorporated as municipalities with a total population of 527,348; of these 18, in the County of Cumberland, contain 106,417 persons, for the most part dependent on the city for their livelihood, and 13, comprising the large mining centres of Newcastle, Broken Hill, and Lithgow, contain 125,869 inhabitants, leaving 295,062 in 113 of the larger rural towns. Distributed over the remainder of the State, 99 per cent. of its area, are 667,886 persons, of whom a small number live in the large unincorporated towns, and only 15,189 in the Western Division, which covers 40·7 per cent. of the area of the State.

The density of population diminishes rapidly from city, suburban, country urban to rural districts. The average density of population is 6·8 per square mile, which is greater than that of any other State of the Commonwealth except Victoria and Tasmania.

The distribution of population at the census of 1921, together with the proportion in each division and the average population per square mile, are shown in the following table:—

Division.	Area.	Population at Census, 1921.		
		Total.	Proportion in Each Division.	
	sq. miles.		per cent.	per sq. mile.
Sydney ... ..	5	110,896	5·3	22,179·0
*Suburbs of Sydney ... ..	180	795,051	37·8	4,417·0
Metropolis ... ..	185	905,947	43·1	4,896·8
Extra Metropolitan Municipalities and Shires.	515	100,764	4·8	195·6
Metropolitan Area as defined in Local Government Act.	700	1,006,711	47·9	1,438·2
Country Municipalities ... ..	2,612	459,179	21·9	175·8
Country Shires ... ..	180,673	620,102	29·5	3·4
Western Division (Part unincorporated).	125,294	15,189	0·7	0·1
Lord Howe Island ... ..	5	111	0·0	22·2
Total, New South Wales ...	309,284†	2,101,292	100·0	6·8

\* Including Ku-ring-gai Shire, area 36 sq. miles, population 19,219.

† Excludes 176 sq. miles being water area of harbours included in total area of State shown on page 49.

The population of the metropolis represents more than two-fifths of the total population; less than one-quarter of the people reside in the country municipalities, and less than one-third in the remaining rural districts.



## ERRATA.

PAGE 112.—In table : —Opposite “Country Municipalities,” 1st column, *for* 2,612 *read* 2,636 ; 4th column, *for* 175·8 *read* 174·2 : opposite “Country Shires,” 1st column, *for* 180,673 *read* 180,649.

*Urban and Rural Population.*

A comparison of the urban and rural elements of the population of the State at the last four censuses reveals that the population of New South Wales, in common with that of most other countries of the world, tends to congregate in metropolitan and urban centres. In the following table the population shown represents the total under each classification at each census, the shipping and aboriginal elements being omitted from the four main headings and shown separately. The number of municipalities and quasi-urban localities increased throughout the period, and the growth shown is due in part to the inclusion of new settlements and in part to the growth of settlements existing at the previous census.

Divisions.	1891.	1901.	1911.	1921.
1. Metropolis ... ..	383,283	480,976	629,503	899,099
2. Municipalities outside the Metropolis..	304,905	370,934	421,714	525,399
3. Quasi-urban localities or settlements with population exceeding 500 ...	51,963	81,484	175,303	} 665,991
4. Remainder of State (Rural) ... ..	376,643	411,791	412,058	
5. Total ... ..	1,116,794	1,345,185	1,638,578	2,090,489
6. Federal Capital Area*... ..	1,456	1,535	1,724	2,572
7. Shipping... ..	5,649	8,026	8,051	9,163
8. Lord Howe Island ... ..	55	100	105	111
9. Aborigines ... ..	8,280	4,287	2,012	1,529
10. Total Population, New South Wales†	1,132,234	1,359,133	1,650,470	2,103,864
Proportion per cent. to total (5) of—				
1. Metropolis ... ..	34·3	35·7	38·4	43·0
2. Municipalities outside Metropolis	27·3	27·5	25·7	25·1
3. Quasi-urban... ..	4·6	6·1	10·7	} 31·9
4. Rural ... ..	33·8	30·7	25·2	
	100·0	100·0	100·0	100·0

\* Ceded to Commonwealth, 1 January, 1911.

† Including Federal Capital Area.

It is not to be expected, in a young country such as New South Wales in the early stages of development, that population would show a decline in any respect. But while decline is not shown in the above table in terms of population, the proportion of inhabitants in respective divisions shows some rather surprising movements. Over the period of thirty years the total population increased by 85·8 per cent., which represents an average growth for all divisions. The population of the metropolitan area grew more than that of any other division—134·6 per cent., the municipalities 72·3 per cent., and the quasi-urban and rural centres combined only 55·4 per cent.

The outstanding features of the population at the present time are the dominance of the metropolitan element in proportion to the remainder of the population and the diminishing importance of the extra metropolitan, municipal and rural proportions.

Since most of the larger towns of the State are incorporated as municipalities, the total populations of the municipalities and of the shires with the unincorporated areas may be considered to indicate respectively, with approximate accuracy, the division of the population into its urban and rural elements. An analysis made on these lines at each of the last two censuses shows strikingly the relative development in the past ten years of urban and rural portions.

of the State in the various territorial divisions shown on the map in the frontispiece. In the following table the same municipalities and the same shire areas are treated in every division for both years.

Division.	Population of Municipalities.		Population of Shires.		Increase in Population 1911-1921.	
	1911.	1921.	1911.	1921.	Municipalities (Urban).	Shires (Rural).
Cumberland ...	711,391	1,044,959	9,389	14,738	333,568	5,349
Coast—						
North ...	29,530	33,718	72,911	90,297	4,188	17,386
Hunter and Manning	81,149	115,961	103,613	129,029	34,812	25,416
South ...	35,987	42,678	43,533	46,651	6,691	3,118
Tableland—						
North ...	20,109	19,952	31,773	31,425	(—) 157	(—) 348
Central ...	44,997	55,527	74,195	75,066	10,530	871
South ...	16,326	20,029	27,899	26,630	3,703	(—) 1,269
Western Slopes—						
North ...	18,597	17,995	36,992	33,917	(—) 602	(—) 3,075
Central ...	13,197	14,861	24,003	25,492	1,664	1,489
South ...	33,081	38,595	55,919	57,329	5,514	1,410
Plains—						
North ...	6,260	6,307	20,033	20,491	47	458
Central ...	8,473	8,678	20,627	19,730	205	(—) 897
Riverina ...	10,890	11,886	38,105	51,598	996	13,493
Western Division ...	41,346	32,564	18,421*	15,189*	(—) 8,782	(—) 3,232*
Whole State ...	1,071,333	1,463,710	577,413	637,582	392,377	60,691

\* Unincorporated.

(—) In last two columns denotes a decrease.

The incorporated urban districts now contain rather more than two-thirds of the inhabitants of the State, having increased in population by 392,377 in the last ten years as compared with an increase of 60,169 in rural districts. Of the total increase 73·7 per cent., or nearly three-fourths, occurred in the municipalities of County Cumberland, principally in those which compose the metropolitan area, while important growth is evident in the municipalities of the Hunter and Manning, principally in Newcastle and its suburbs, and in the towns of the Central Tableland, principally in the mining and manufacturing town of Lithgow, and the residential town of Katoomba. The rural populations of only three country districts have made noteworthy advances; these were in the prosperous small-farming districts of the Hunter and Manning, and of the North Coast and the wheat-farming and irrigation districts of the Riverina.

This growth has, moreover, proceeded to a certain extent to the detriment of several country divisions, and actual losses of population are evident in the north-western and western parts of the State, in both urban and rural

districts, while the country districts of the Southern Tablelands and Central-western Plains have also lost population. The towns on the plains have, on the whole, shown practically no progress.

Such a condition of affairs assumes a serious aspect when considered in conjunction with the natural increase of population in each division, so that the amount and direction of migration in each division of the State are revealed. The analysis made below shows clearly that the growth of the metropolis has proceeded at the expense of country districts, not only by absorbing population from them at nearly as great a rate as it was supplied by natural increase, but also by absorbing a further element of population as great as the immigration from overseas. Beyond the metropolitan area, only two divisions have gained population by immigration in the past ten years; these were the Hunter and Manning, containing the flourishing coal-mining fields and the growing manufacturing districts of Newcastle, and the Riverina, which contains the now extensive irrigation settlements of the Murrumbidgee.

The following table shows, for each division of the State at the censuses of 1911 and 1921, the total population, the total increase, the natural increase and the net migration:—

Division.	Population at Census.		Total Increase in Population, 1911 to 1921.	Excess of Births over Deaths, 1911 to 1921.	Apparent Increase or Decrease due to Migration, 1911 to 1921.	
	1911.	1921.			Increase.	Decrease.
Cumberland ... ..	720,780	1,059,697	338,917	124,487	214,430	...
Coast—						
North ... ..	102,441	124,015	21,574	26,400	...	4,826
Hunter and Manning...	184,762	244,990	60,228	42,799	17,429	...
South ... ..	79,520	89,329	9,809	14,260	...	4,451
Tableland—						
North ... ..	51,882	51,377	(—) 505	12,413	...	12,918
Central... ..	119,192	130,593	11,401	20,655	...	9,254
South ... ..	44,225	46,659	2,434	7,864	...	5,430
Western Slopes—						
North ... ..	55,589	51,912	(—) 3,677	10,663	...	14,340
Central .. ...	37,200	40,353	3,153	10,479	...	7,326
South ... ..	89,000	95,924	6,924	17,942	...	11,018
Plains—						
North ... ..	26,293	26,798	505	5,569	...	5,064
Central... ..	29,100	28,408	(—) 692	4,268	...	4,960
Riverina ... ..	48,995	63,474	14,489	11,851	2,638	...
Western Division ...	59,767	47,753	(—) 12,014	8,880	...	20,894
Whole State ...	1,648,746	2,101,292	452,546	318,530	134,016	...

(—) In the third column denotes decrease.

*The Population of the Metropolis.*

The Metropolis includes the City of Sydney, forty municipalities surrounding it, and the Ku-ring-gai Shire, as well as the islands of Port Jackson, and embraces an area of 185 square miles. The boundaries may be described roughly as follow: On the east, the sea-coast; on the south, the waters of Botany Bay and George's River; on the west, the western boundaries of Hurstville, Canterbury, Enfield, Strathfield, Homebush, Concord, and Ryde; on the north, the northern boundaries of Eastwood and Ryde municipalities, the western and eastern boundaries of Ku-ring-gai Shire, the north-eastern boundary of Willoughby, and the northern boundary of Manly. The habitations within these limits are fairly continuous.

The following statement shows the population of each municipality of the Metropolis, and of Ku-ring-gai Shire, at the censuses of 1911 and 1921:—

Municipality.	Population.		Municipality.	Population.	
	Census, 1911.	Census, 1921.		Census, 1911.	Census, 1921.
City of Sydney*	119,774	110,896	Manly	10,465	18,515
Alexandria	10,123	9,794	Marrickville	30,653	42,264
Annandale	11,241	12,657	Mascot	5,836	10,930
Asbfield	20,431	33,658	Mosman	13,243	20,058
Balmain	32,088	32,140	Newtown	26,498	28,179
Bexley	6,517	14,738	North Sydney	34,648	48,452
Botany	4,409	6,210	Paddington	24,317	26,359
Burwood	9,382	15,735	Petersham	21,712	26,234
Canterbury	11,335	37,621	Randwick	19,475	50,839
Concord	4,076	11,002	Redfern	24,427	23,945
Darlington	3,816	3,648	Rockdale	14,095	25,179
Drummoyne	8,678	18,764	Ryde	5,281	14,866
Eastwood	968	2,132	St. Peter's	8,410	12,708
Enfield	3,444	8,527	Strathfield	4,046	7,594
Erskineville	7,299	7,552	Vaucluse	1,673	3,720
Glebe	21,944	22,775	Waterloo	10,072	11,199
Homebush	676	1,622	Waverley	19,832	36,788
Hunter's Hill	5,019	7,334	Willoughby	13,037	28,094
Hurstville	6,533	13,398	Woollahra	16,992	25,431
Kogarah	6,954	18,214	Ku-ring-gai Shire	9,459	19,219
Lane Cove	3,306	7,599			
Leichhardt	24,254	29,358	Total	636,388	905,947

\* Includes shipping and the islands of Port Jackson.

In addition to these suburbs there are, in close proximity to the city, a number of important centres of population of a more or less suburban character, since important proportions of their inhabitants gain their livelihood in the city. An extended definition of the metropolitan area was given in the Local Government Act of 1919, and included the following additional localities, whose populations were as shown :—

Municipalities.	Population.		Shires.	Population.	
	Census, April, 1911.	Census, April, 1921.		Census, April, 1911.	Census, April, 1921.
Auburn ...	5,559	13,565	Hornsby ... ..	8,907	15,279
Bankstown ...	2,039	10,662	Sutherland ... ..	2,896	7,678
Dundas ...	1,136	3,520	Warringah ... ..	2,823	9,638
Ermington and Rydalmere ...	1,716	1,981	Extra-Metropolitan Shires...	14,626	32,595
Granville ...	7,231	13,320	Population of Metropo'is as shown above ... ..	636,388	905,947
Lidcombe ...	5,419	10,519			
Parramatta ...	12,476	14,602			
Extra-Metro- politan Muni- cipalities ...	35,576	68,169	Metropolitan Area as defined in Local Government Act	686,590	1,006,711

The population of the metropolis at census periods is shown in the following table, together with the proportion which the metropolitan population bears to that of the whole State :—

Year.	Population at Census.			Males per cent.	Males per 100 Females.	Proportion of Population of State in Metropolis.
	Males.	Females.	Total.			
1861	47,778	49,283	97,061	49.21	97	per cent. 27.7
1871	68,266	70,913	139,179	49.05	96	27.6
1881	114,936	112,230	227,166	50.60	102	30.2
1891	197,550	189,884	387,434	50.99	104	34.2
1901	241,700	246,232	487,932	49.54	98	35.9
1911	312,074	324,279	636,353	49.04	96	38.5
1921	439,730	463,217	905,947	48.54	94	43.1

It is interesting to note that the proportion of the population of the State resident in the metropolis has increased rapidly in the past half-century and more, particularly in the last ten years, and that since 1891, the proportion of females in the metropolis has increased, so that at the census of 1921 there was an excess of three females in every hundred of the population.

The population of the Metropolis is not distributed evenly, as 414,259 persons, or 43.4 per cent. of the inhabitants, live in the central portions, which comprise 13,137 acres, or less than one-tenth of the total area, while in some outlying suburbs there is less than one person to the acre. The

scattered nature of the population in these cases indicates rather that room exists for development than that dwellings are widely and evenly distributed.

The following table shows the manner of the distribution of population in each group of municipalities of the metropolitan area, as defined in the Local Government Act. It includes a comparison of the average number of persons per acre at each census since 1901, and in this way indicates the relative development of each district:—

Municipalities of Metropolitan Area.	Population at Census 1921.*	Area.	Number of Occupied Dwellings at Census, 1921.	Number of Persons per Occupied Dwelling.	Average Number of Persons per acre.		
					1901.	1911.	1921.
Sydney ... ..	104,182	acres. 3,327	17,335	†6.00	36.4	33.8	31.3
Suburbs—							
North-western ... ..	96,897	2,983	20,059	4.82	25.2	30.0	32.5
West-central ... ..	48,439	1,504	9,989	4.89	22.9	28.0	32.2
East-central ... ..	65,726	6,728	12,963	†5.07	8.0	8.7	9.8
Eastern ... ..	143,114	13,126	29,179	4.90	4.3	6.3	10.9
Western ... ..	165,398	15,115	35,107	4.71	4.5	6.8	10.9
Southern ... ..	109,150	26,524	23,758	4.58	.9	1.7	4.1
Northern ‡ ... ..	147,004	25,952	31,092	4.72	1.9	3.3	5.7
Municipalities of Metropolis	879,910	95,259	179,482	4.90	5.1	6.5	9.2
Extra Metropolitan Municipalities ... ..	68,169	38,478	13,418	†5.08	.7	.9	1.8
Municipalities of Metropolitan Area as defined in Local Government Act ...	948,079	133,737	192,900	4.91	3.9	4.9	7.1

\* Excludes shipping.

† Includes large institutions.

‡ Includes Ku-ring-gai Shire.

Population is being driven from the city proper by the steady growth of business establishments which replace dwelling-houses. The average number of persons per occupied dwelling is fairly uniform in all municipalities except where institutions with a large number of occupants exist. The density of population, however, is not so uniform, as is clear from a comparison of the various districts. Of the municipalities, Darlington, with a population of 82.9 persons per acre, is the most congested, followed by Paddington 65.4, Newtown 63.8, Redfern 55.0, Erskineville 45.5, and Glebe 43.7. Similar particulars of all municipalities of the metropolitan area are published in Part "Population" of the Statistical Register of New South Wales, 1920-21.

The growth of the population of the Metropolis has proceeded at a very rapid rate during the past ten years over the whole of its wide area with the exception of the city proper, and of Darlington, the most congested municipality. The comparatively small number of dwellings and of persons per acre in many easily accessible municipalities indicates that room exists for a continuance of this rapid expansion within the present boundaries if the needs of the immediate future demand it. Assuming that the average

existing in the inlying suburbs of six houses per acre were reached throughout the area, and that the existing average of about five persons per dwelling were maintained, there is room within the present metropolitan area for a population of approximately 4,000,000 persons without undue congestion.

The following comparison with the density of population in the large cities of England as determined at the census of 18th June, 1921, is interesting.

City.	Area.	Population.	Average Number of Persons per acre.
	acres.		
London ... ..	74,850	4,483,249	59.9
Birmingham ... ..	43,601	919,438	23.3
Liverpool ... ..	21,242	803,118	37.9
Manchester ... ..	21,690	730,551	33.7
Sydney* ... ..	95,259	879,910	9.2

\* Municipalities only ; total population of Metropolis, 905,947.

While the population of the city of London has diminished slightly during the past twenty years, and those of Liverpool and Manchester have shown small increases, Birmingham and Sydney stand out as two rapidly-developing cities, though the growth of Sydney is proceeding at by far the greater rate.

The populations of the capital cities (including suburbs) of the States of the Commonwealth are shown below :—

Metropolis.	Census, 1911.	Census, 1921.			Proportion of Population of Whole State. 1921.
		Males.	Females.	Total.	
Sydney ... ..	629,503	433,559	465,540	899,099	per cent. 42.88
Melbourne ... ..	588,971	359,481	407,025	766,506	50.05
Brisbane ... ..	139,480	101,083	108,949	210,032	27.75
Adelaide ... ..	189,646	120,770	134,711	255,481	51.81
Perth ... ..	106,792	75,097	79,769	154,866	47.12
Hobart ... ..	39,937	24,711	27,680	52,391	24.53

The populations shown above are exclusive of shipping, and for this reason the population of Sydney differs from that shown in the previous table.

#### THE TOWNS OF NEW SOUTH WALES.

As would be expected from the nature of the industries of the State there are in New South Wales comparatively few large towns. Outside of the metropolitan area, the only towns of outstanding importance are Newcastle and Broken Hill, and the existence of both is due to the rich mineral deposits in their neighbourhood. Lithgow, the fifth largest town, is also dependent on mining for its existence. Apart from these and the centres



in the County of Cumberland closely dependent on the city, there are only two country centres incorporated as municipalities with a population exceeding 10,000, ten between 5,000 and 10,000, and nineteen between 3,000 and 5,000. There are in addition several large unincorporated centres, particulars of which are not yet available from the census of 1921.

The following table affords a comparison of the populations at the last four censuses of the municipalities, which at the census of 1921 had more than 3,000 inhabitants, the metropolitan and closely-dependent municipalities being shown first:—

Municipality.	Population at Census.			
	1891.	1901.	1911.	1921.
Sydney and Suburbs† ... ..	387,331	487,900	636,388	905,947
Parramatta† ... ..	11,677	12,560	12,476	14,602
Auburn*† ... ..	2,026	2,948	5,559	13,565
Granville† ... ..	4,248	5,094	7,231	13,320
Bankstown*† ... ..	108	1,246	2,039	10,662
Lidcombe† ... ..	2,084	4,496	5,419	10,519
Dundas† ... ..	881	1,087	1,136	3,520
Newcastle and Suburbs ... ..	50,662	54,991	55,380	86,255
Broken Hill ... ..	19,789	27,500	30,974	26,338
Lithgow ... ..	3,865	5,268	8,196	13,276
Goulburn ... ..	10,916	10,612	10,023	12,886
Maitland ... ..	10,214	10,073	11,318	12,005
Bathurst ... ..	9,162	9,223	8,578	9,443
Katoomba ... ..	1,592	2,270	4,924	9,054
Lismore ... ..	2,925	4,464	7,382	8,691
Albury ... ..	5,447	5,821	6,309	7,747
Wagga Wagga ... ..	4,596	5,108	6,419	7,676
Orange ... ..	5,064	6,331	6,722	7,399
Tamworth ... ..	4,602	5,799	7,147	7,265
Wollongong ... ..	3,058	3,554	4,673	6,707
Armidale ... ..	3,826	4,249	4,739	5,388
Dubbo ... ..	3,551	3,409	4,455	5,031
Glen Innes ... ..	2,532	2,918	4,089	4,976
Grafton ... ..	3,618	4,173	4,685	4,608
Forbes ... ..	3,011	4,294	4,436	4,379
Inverell ... ..	2,534	3,293	4,549	4,366
Parkes ... ..	2,449	3,181	2,935	3,947
Wellington ... ..	1,545	2,984	3,958	3,929
Windsor† ... ..	2,033	2,039	3,466	3,807
Cowra... ..	1,546	1,811	3,292	3,733
Kempsey ... ..	2,194	2,329	2,947	3,609
Penrith † ... ..	3,099	3,539	3,683	3,596
Junee... ..	1,682	2,190	2,531	3,563
Cootamundra.. ..	2,026	2,424	2,967	3,528
Casino ... ..	1,486	1,926	3,429	3,456
Young.. ..	2,746	2,755	3,140	3,279
Singleton ... ..	2,595	2,872	2,999	3,274
Mudgee ... ..	2,410	2,789	2,942	3,168
Temora ... ..	915	1,603	2,784	3,048
Moree... ..	1,143	2,298	2,937	3,028
Narrandera ... ..	1,815	2,255	2,374	3,010
Towns in County Cumberland ... ..	413,487	520,909	677,397	979,538
Newcastle and Suburbs ... ..	50,662	54,991	55,380	86,255
Other Country Towns ... ..	124,854	149,776	178,853	201,807
Total ... ..	589,003	725,676	911,630	1,267,600

\* Not incorporated 1891.

† Towns in County Cumberland.

The total population of these larger towns has grown at a fairly uniform rate during the whole of the period of thirty years, and the towns of County Cumberland have shown an especially rapid increase in the last ten years. Newcastle, after twenty years of slow progress, made rapid headway between 1911 and 1921 largely on account of the growth of its manufacturing industries. The other rural towns, on the whole, have maintained a steady growth throughout, but the decline of the silver-lead mining industry—due largely to derangement of the markets of the world—has arrested the growth of Broken Hill, which has actually lost population during the past ten years. Lithgow, a coal-mining and partly manufacturing town, has continued to grow rapidly. Goulburn has developed, after twenty years of stagnation, into the leading town of the interior not dependent on mining; and Katoomba, a residential town, 60 miles from Sydney, has also grown rapidly.

#### PERSONS OF NON-EUROPEAN RACES.

Legislative measures to restrict the influx of coloured aliens were passed in New South Wales in the early days of self-government. Public feeling was first aroused by the entry of large numbers of Chinese, and the enactments at first imposed limitations on the immigration of this race only. Subsequently, however, these restrictive powers were extended to regulate the influx of all coloured aliens.

At the establishment of the Commonwealth power to regulate immigration was vested in the Federal Parliament. The Federal legislation relating to the restriction of immigration does not aim at the exclusion of the people of any particular race or colour, but of undesirable immigrants generally. Under its provisions no person is allowed to land who fails to pass a dictation test in any European language chosen by the Customs Officers. This test has not been applied to any desirable immigrants of European nationality. Paupers, criminals, lunatics, and other persons likely to be a source of danger to public health or morals, are excluded.

Provision is made also to prevent the immigration of labourers under contract to perform manual labour if their arrival has any connection with an industrial dispute, or if the contract-rate of wages is less than that current in the district where the work is to be performed.

At the census of 1911 the number of persons of non-European origin residing in New South Wales was 13,140, exclusive of aborigines, and represented the very small proportion of 8 per 1,000 of the total population. The most numerous were the Chinese, who constituted 70 per cent. of the coloured aliens, Hindus and Syrians following in the order given.

Similar particulars of the census of 1921 are not yet available.

#### *The Chinese.*

The Chinese were first attracted to this State by the gold discoveries. At the census of 1861 they numbered 12,988, exclusive of half-caster, who were not enumerated until 1891. From 1861 to 1871 the number declined, probably on account of the diminution in the gold-yield and the discovery of richer goldfields in the neighbouring States; but after 1878 there was a steady increase in the arrivals from China, and this lasted until 1888, when an effective check was given to their immigration by the Chinese Restriction and Regulation Act.

The following table shows the number of Chinese (including half-castes) in Australia at each census from 1891 to 1911 :—

State.	1891.	1901.	1911.
New South Wales (including Federal Capital Territory) ...	14,156	11,263	9,358
Victoria ... ..	9,377	6,956	5,601
Queensland ... ..	8,574	9,313	6,714
South Australia (including Northern Territory) ... ..	3,997	3,455	1,698
Western Australia... ..	917	1,569	1,872
Tasmania ... ..	1,056	609	529
Total, Commonwealth ... ..	38,077	33,165	25,772

At the census of 1911 there were 3 Chinese in the Federal Capital area, and 1,339 in the Northern Territory.

The arrivals of Chinese in New South Wales during 1920 numbered £64, and the departures 953.

#### *The Aborigines.*

It is difficult to form a correct estimate of the number of aborigines in New South Wales at the date of settlement, but though there is reason to believe that they were formerly numerous, they have decreased rapidly before the advance of settlement, and are now of insignificant proportions.

Governor Phillip estimated the aboriginal population, about the year 1790, at 1,000,000, and of this number he stated that about 3,000 lived between Broken and Botany Bays. The latter estimate was very likely correct, but the estimate of the total number was doubtless based on the assumption that the resources of the unlocked Continent were as great as those of the strip of settlement immediately under his notice, and is therefore unreliable. The aborigines were never properly counted until the census of 1891, when they were classed as full-blood and half-caste. In 1901 the full-blood and nomadic half-caste only were counted.

In reckoning the quota to determine the number of members to which the State is entitled in the House of Representatives (in accordance with the provisions of the Commonwealth Constitution Act), aboriginal natives of Australia are not included. It has been decided that only full-bloods are aborigines within the meaning of the Act, and consequently since 1901 half-castes have been included in the general population. The numbers shown in the following table for the censuses of 1911 and 1921 represent only those full-bloods who were employed by whites, or who were living in the vicinity of white settlements at the date of the census. In 1861 aborigines were not enumerated; in 1871 and 1881 the wandering tribes were passed over, and only those who were civilised, or who were in contact with Europeans, were enumerated and included in the general population. The number of full-blooded aborigines in New South Wales at each census is shown below; the figures for 1911 are exclusive of the Federal Capital Territory, in which were enumerated 10 aborigines—5 males and 5 females. In 1921 there were no aborigines in the Territory.

Census.	Males.	Females.	Total.
1871	709	274	983
1881	938	705	1,643
1891	4,559	3,721	8,280
1901	2,451	1,836	4,287
1911	1,152	860	2,012
1921	885	644	1,529

It is apparent that the aborigines of New South Wales are rapidly dying out.

In 1891 the number of half-castes was 1,663 males and 1,520 females. In 1901 the number of both full-bloods and half-castes was 4,093 males and 3,341 females, and of these 509 were nomads—259 males and 250 females. At the census of 1911 4,512 half-castes were enumerated, of whom 2,335 were males and 2,177 were females. Particulars of the number of half-castes at the census of 1921 are not yet available.

The Board for the Protection of Aborigines was constituted in 1910 to safeguard the interests of the aboriginal population, and reserves were dedicated in different parts of the State, dwellings erected, and the means of livelihood organised. The residents on these reservations are encouraged to till the soil by the supply of tools and seeds, and their children are educated. Under an Act passed in 1909 the control of the reserves was vested in the Board, and its powers of administration were considerably amplified with a view to ameliorating the conditions of the aborigines. Information relating to the work of the Board will be found in a later chapter on Social Condition.

#### NATURALISATION.

Under the Commonwealth Naturalisation Act, which came into operation on 1st January, 1904, the issue of naturalisation certificates became a function of the Commonwealth Government.

Since 1849 certificates have been granted in New South Wales to 16,780 persons, of whom Germans numbered 6,400; Swedes, 1,680; Russians, 1,074; Danes, 1,129; Italians, 933; and French, 764. Only two Chinese have been naturalised in New South Wales since 1887, but prior to that year 908 had obtained certificates.

Records of the occupations of persons naturalised show that labourers, seamen, miners, cooks, carpenters, farmers, engineers, fruiterers, and firemen were the most numerous, in the order given.

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## VITAL STATISTICS.

### REGISTRATION OF BIRTHS, DEATHS, AND MARRIAGES.

CIVIL registration of births, deaths, and marriages was inaugurated in New South Wales in March, 1856, when a general registry was established, and a Registrar-General appointed by the Governor. The laws relating to registration were consolidated by the Registration of Births, Deaths, and Marriages Act, 1899, and the Acts relating to marriage by the Marriage Act, 1899.

All births must be registered by the parent within sixty days. After the expiration of sixty days no birth may be registered unless, within six months, a declaration is furnished by the parent, or by some person present at the birth. Within six months of the arrival in New South Wales of a child under the age of 18 months, born outside the State, the birth may be registered upon declaration by the parent, if the parents intend to reside in New South Wales. Still-births are not registered.

Notice of the death of any person must be supplied to the District Registrar by a relation of the deceased, or by the householder or tenant of the house or place in which the death occurs.

Marriages may be celebrated only by District Registrars or by ministers of religion registered for that purpose by the Registrar-General. In the former case, the parties to be married must sign, before the Registrar of the district in which the intended wife ordinarily resides, a declaration that they conscientiously object to be married by a minister of religion, or that there is no minister available for the purpose of performing the marriage.

New South Wales is divided into 211 registry districts, in each of which a District Registrar has been appointed.

### MARRIAGES.

The number of marriages celebrated in New South Wales during 1920 was 20,183, corresponding to a rate of 9.76 per 1,000 of the population. This shows a marked increase on the previous year, when the number of marriages was 15,818, and the rate 7.91.

The following table shows the average annual number of marriages and the rates per 1,000 of the population during each quinquennium since 1870:—

Period.	Average Annual Number of Marriages.	Rate per 1,000 of Population.	Period.	Average Annual Number of Marriages.	Rate per 1,000 of Population.
1870-74	4,091	7.77	1900-04	10,240	7.37
1875-79	4,987	7.88	1905-09	12,080	7.97
1880-84	6,738	8.39	1910-14	15,978	9.14
1885-89	7,679	7.67	1915-19	15,345	7.96
1890-94	7,954	6.80	1920	20,183	9.76
1895-99	8,700	6.74			

Until the year 1891 the increase in the number of marriages was remarkably steady, but in 1892 there was a decline, which continued until 1895, when the figures again took an upward movement, though the propor-

tion married per 1,000 of the population did not reach the 1891 level until 1901. In 1901 the rate was the highest since 1886, but in the next two years it declined again considerably. From 1904 to 1912 there was a constant improvement. Compared with the rates of the quinquennium 1895-99, the marriage rate of 1915 disclosed an advance of over 42 per cent. It is probable that the high rate for 1915 was due, in part, to a number of marriages contracted by soldiers prior to their departure for the war, and the decline in 1916, 1917 and 1918 to the withdrawal of marriageable men from the total population. A large increase occurred in 1919 coincident with the return of men from active service, and an even greater improvement was shown in 1920.

This survey of marriages in quinquennial periods since 1870, considered in conjunction with the industrial history of the State, shows that in the past fifty years, except for the war period, the marriage rate has risen and fallen with the condition of trade, indicating that it is normally a reliable reflex of the comparative prosperity of the State.

The following statement shows the marriage rate per 1,000 of the population in each State of the Commonwealth of Australia and in New Zealand in 1920 compared with the average of the preceding five years :—

State.	1915-19.	1920.
New Zealand ... ..	7.30	10.32
South Australia ... ..	7.94	10.03
Victoria ... ..	7.62	9.85
New South Wales ... ..	7.96	9.76
Tasmania ... ..	6.90	9.50
Queensland ... ..	7.59	8.92
Western Australia ... ..	6.62	8.90

Of the bachelors marrying in New South Wales only 4½ per cent. are outside the ages 20-44, and of the spinsters less than 1½ per cent. are outside the ages 15-39. Adopting these therefore as the marriageable ages of the sexes, the following table shows, at the census years 1871 to 1911, the proportion of bachelors and of spinsters married per 1,000 unmarried males and females within the specified groups :—

Year.	Proportion of Bachelors Married during Year per 1,000 Unmarried Males Aged 20 to 44.	Proportion of Spinsters Married during Year per 1,000 Unmarried Females Aged 15 to 39.
1871	65.60	87.07
1881	65.21	82.32
1891	57.85	71.28
1901	65.92	62.69
1911	79.11	74.96

Up to 1891 the female rate was the higher, but after that year the male rate exceeded the female, as a result of the increase in the proportion of females in the population.

#### *Mark Signatures in Marriage Registers.*

In 1870 the proportion of signatures made in the marriage register with marks was as high as 18.23 per cent. of the whole, but in 1920 the number of

persons who signed in this way was only 82, equal to 2.03 per 1,000 persons married. This significant decrease in illiteracy is emphatic evidence of the efficiency of the State system of public instruction.

*Marriages according to Denominational Rites.*

Of every hundred marriages performed in New South Wales, about ninety-six are celebrated by ministers of religion licensed under the authority of the Registrar-General. The number of marriages at which clergymen officiated during the year 1920 was 19,250, and of those contracted before District Registrars 933, or a proportion respectively of 95.4 and 4.6 per cent.

As compared with the preceding quinquennial period, the returns relating to marriages solemnised by the Church of England showed increased rates for the year 1920. The following table gives the number and proportion per cent. of marriages registered by the several denominations during 1920, in comparison with the preceding quinquennium :—

Denomination.	Marriages, 1915-1919.	Proportion per cent.	Marriages, 1920.	Proportion per cent.
Church of England ... ..	33,354	43.47	9,067	44.92
Roman Catholic ... ..	15,473	20.17	3,847	19.06
Presbyterian ... ..	10,138	13.21	2,627	13.02
Methodist ... ..	9,683	12.62	2,475	12.26
Congregational ... ..	1,998	2.60	454	2.25
Baptist ... ..	1,217	1.59	326	1.62
Hebrew ... ..	219	0.29	53	0.26
All Other Sects ... ..	1,949	2.54	401	1.99
District Registrars ... ..	2,696	3.51	933	4.62
Total Marriages ... ..	76,727	100.00	20,183	100.00

*Condition before Marriage.*

During the year 1920 of the males married, 18,772 were bachelors, 1,174 were widowers, and 237 were divorced. Of the females, 17,719 were spinsters, 848 were widows, and 205 were divorced. The proportion of males re-married was 6.99 per cent., and of females 7.44 per cent.

The following table shows at quinquennial intervals since 1891 the proportion of first marriages and of re-marriages per 10,000 married :—

Period.	Males.		Females.	
	Bachelors.	Widowers and Divorced Men.	Spinsters.	Widows and Divorced Women.
1891	9,229	771	9,216	784
1896	9,184	816	9,172	828
1901	9,270	730	9,268	732
1906	9,262	738	9,352	648
1911	9,407	593	9,456	544
1916	9,377	623	9,362	638
1920	9,301	699	9,256	744

The number of widows and divorced women who re-married in 1916 and 1920 was greater than in the case of widowers and divorced men, whereas the reverse had usually been the case; the variation is probably due to the loss of life among married men at the war. Of the contracting parties per 1,000 marriages in 1920, 930 males and 926 females had never been married before.

*Age at Marriage.*

The following statement shows the average age at marriage both of bridegrooms and of brides for each of the last ten years. The difference between the ages at marriage of males and females is now on the average about  $3\frac{1}{2}$  years, the males being the older.

Year.	Average Age of—		Average Age of—		Year.	Average Age of—		Average Age of—	
	All Bridegrooms.	Bachelors.	All Brides.	Spinsters.		All Bridegrooms.	Bachelors.	All Brides.	Spinsters.
	years.	years.	years.	years.		years.	years.	years.	years.
1910	29·0	28·2	25·3	24·6	1916	29·1	23·4	26·1	25·2
1911	28·8	28·0	25·3	24·7	1917	29·7	28·5	26·0	25·0
1912	28·9	28·4	25·3	25·0	1918	29·5	28·0	25·5	24·5
1913	28·8	27·8	25·5	24·7	1919	29·2	28·2	25·7	24·7
1914	28·8	27·9	25·6	25·0	1920	29·0	28·0	25·6	
1915	28·7	28·0	25·5	25·0					

The average age at marriage, of both bridegrooms and brides, has remained practically constant during the last twenty years.

Of the 20,183 couples married in 1920, the ages of 20,181 bridegrooms and 20,179 brides were recorded.

*Marriages of Minors.*

The number of persons under 21 years of age who were married during 1920 was 4,788, or 11·86 per cent. of the total. The following are the figures at decennial intervals since 1881 :—

Year.	Minors.		Percentage of—	
	Bridegrooms.	Brides.	Bridegrooms.	Brides.
1881	149	1,660	2·37	26·42
1891	177	2,085	2·09	24·65
1901	351	2,546	3·33	24·15
1911	701	3,499	4·59	22·92
1920	864	3,924	4·28	19·44

Compared with the early years the proportion of minors increased among bridegrooms up to the year 1912, when it gradually decreased for five years, the proportion for 1916 being 3·32 per cent. During the next three years the rates were 4·01, 5·19, and 4·68 respectively. Among brides the proportion of minors has always been much larger than among bridegrooms, but it has decreased continuously, with infrequent fluctuations, in the past forty years.

*BIRTHS.*

The number of births registered during 1920 was 53,974, equal to a rate of 26·10 per 1,000 of the population, which is 2·1 per cent. below the average for the previous five years, and is the lowest rate on record, with the exception of those for 1918 and 1919. The number registered during 1914, namely, 53,615, was the highest recorded in New South Wales for any single year previous to that under review. The birth-rate fell sharply after 1888, and declined continuously till 1903, but after that year there was an improvement, and the rate in 1912 was the highest since 1895. There was a decline in the birth-rate during the war years, 1914 to 1919 inclusive, coincident with the decline in the marriage-rate.



The following table shows the average annual number of births and the birth-rate per 1,000 of the total population in quinquennial periods since 1870 :—

Year.	Average Births.	Birth-rate per 1,000 of Population.	Year.	Average Births.	Birth-rate per 1,000 of Population.
1870-74	20,733	39·36	1900-04	37,498	26·99
1875-79	24,388	38·51	1905-09	41,788	27·56
1880-84	30,417	37·89	1910-14	50,190	28·72
1885-89	36,877	36·85	1915-19	51,331	26·65
1890-94	39,550	33·80	1920	53,974	26·10
1895-99	37,042	28·68			

The rates shown above are calculated by the usual crude and unsatisfactory method of relating the births to the total population. A preferable method for purposes of strict analysis is to relate the number of mothers at various ages to the total number of women at corresponding ages, or to relate the number of births to the number of women of child-bearing ages.

Unfortunately these methods can be followed with exactitude only at census dates, since at any other time it is very difficult to make a reliable estimate of the number living at various ages, on account of migration and other influences.

The birth-rates per 1,000 women living at various groups of reproductive ages, from 15 to 45 years, have been calculated for the three census periods 1891, 1901, and 1911, and are shown in the following table :—

Ages of Mothers (years).	1891.	1901.	1911.	Decrease per cent. in rates, 1891 to 1911.
15-19	35·30	30·87	33·75	4·4
20-24	170·90	134·65	141·45	17·2
25-29	247·48	177·95	187·35	24·3
30-34	238·81	168·42	161·20	32·5
35-39	196·15	136·60	122·27	37·7
40-44	96·61	70·79	54·51	43·6
15-44	161·74	117·46	118·50	26·7

From the above table it will be seen that the decline in the birth-rate has been general at all age-groups. There was a slight increase in the general rate between 1901 and 1911, but at ages over 30 the decline has been continuous since 1891.

The birth-rate per 1,000 of the population of each State of the Commonwealth and of New Zealand is given in the following table :—

State.	1915-19.	1920.
Tasmania ... ..	27·78	27·28
Queensland .. ..	27·86	27·10
New South Wales ... ..	26·65	26·10
New Zealand ... ..	24·37	25·36
Western Australia ... ..	25·21	24·73
South Australia ... ..	25·51	24·71
Victoria ... ..	23·13	23·95

*Birth-Rates—Metropolis and Remainder of the State.*

During the year 1920 the births recorded in the metropolitan district of New South Wales numbered 22,352, and in the remainder of the State 31,622, or 25·26 and 26·73 per 1,000 of the population respectively. Prior to the year 1893 the metropolitan birth-rate was the higher, but since then, with the exception of the year 1913, the country has consistently shown a higher rate.

Period.	Number of Births.			Births per 1,000 of Population.		
	Metropolis.	Remainder of State.	New South Wales.	Metropolis.	Remainder of State.	New South Wales.
1880-84	49,058	103,026	152,084	40·16	36·90	37·89
1885-89	65,866	118,517	184,383	41·50	34·69	36·85
1890-94	68,754	128,998	197,752	34·11	33·63	33·80
1895-99	61,224	123,986	185,210	26·73	29·75	28·68
1900-04	63,694	123,795	187,489	25·16	28·05	26·99
1905-09	72,409	136,529	208,938	25·50	28·80	27·56
1910-14	95,529	155,423	250,952	27·66	29·53	28·79
1915-19	100,216	156,439	256,655	25·02	27·81	26·65
1920	22,352	31,622	53,974	25·26	26·73	26·10

*The Sexes of Children.*

Of the 53,974 children born during the year (exclusive of those still-born), 27,723 were males and 26,251 were females, the proportion being 106 males to 100 females. In no year, as far as observation extends, have the female births exceeded in number those of males, although the difference has sometimes been very small. The preponderance of births of male children in New South Wales during a number of years is shown in the following table:—

Years.	Males.	Females.	Total.	Years.	Males.	Females.	Total.
1870-74	10,577	10,156	20,733	1900-04	19,134	18,364	37,498
1875-79	12,477	11,911	24,388	1905-09	21,406	20,382	41,788
1880-84	15,567	14,850	30,417	1910-14	25,728	24,462	50,190
1885-89	18,898	17,979	36,877	1915-19	26,317	25,014	51,331
1890-94	20,324	19,226	39,550	1920	27,723	26,251	53,974
1895-99	18,979	18,063	37,042				

The excess of males over females born during the past fifty-nine years has ranged from 2 per cent. in 1875, 1876, and 1901, to about 8·7 per cent. in 1864, the average being 5 per cent.

The proportion of males born during the war years was very little different from that in the pre-war years.

It is noteworthy that in the case of illegitimate births, the births of males have always maintained the ascendancy, save in the quinquennial period 1885-89 and in the year 1915, when the births of females predominated slightly.

The following table shows the number of males born to every 100 females, both in legitimate and illegitimate births, during the last forty-nine years:—

Years.	Legitimate Births.	Illegitimate Births.	All Births.	Years.	Legitimate Births.	Illegitimate Births.	All Births.
1870-74	104·3	101·0	104·1	1900-04	104·3	102·8	104·2
1875-79	104·6	108·8	104·8	1905-09	105·0	104·9	105·0
1880-84	104·9	103·9	104·8	1910-14	105·2	105·1	105·2
1885-89	105·4	98·8	105·1	1915-19	105·3	104·0	105·2
1890-94	105·7	105·4	105·7	1920	105·4	110·3	105·6
1895-99	105·0	105·4	105·1				

The rates in 1920 of male illegitimate births to females was very high, but was slightly exceeded by the rate in 1919, viz., 110·8.

#### *Plural Births.*

During the year 1920 there were 604 cases of plural births. The children thus born numbered 1,210 (exclusive of four still-births), and included 598 cases of twins (622 males and 571 females), and six cases of triplets (11 males and 6 females). Of these 604 cases, 28 were classified as illegitimate.

The number of children born at plural births was 2·24 per cent. of the total births.

The following table shows the number of cases of twins, triplets, and quadruplets born in New South Wales during the last ten years, excluding those still-born, and distinguishing legitimate and illegitimate :—

Cases of—	Legitimate.	Illegitimate.	Total.
Twins ... ..	5,351	256	5,607
Triplets ... ..	46	3	49
Quadruplets ...	1	...	1

The total number of confinements recorded during the ten years was 501,385; hence the rates per million confinements were :—10,986 cases of twins, 96 of triplets, and 2 of quadruplets; otherwise stated, there were 11 plural births in every 1,000 confinements.

#### ILLEGITIMACY.

The number of illegitimate births in 1920 was 2,635, equal to 4·88 per cent. of the total births. A statement of the illegitimate births in New South Wales, distinguishing between the Metropolis and the remainder of the State, is given herewith.

Year.	Number of Illegitimate Births.			Ratio per cent. to Total Births.		
	Metropolis.	Remainder of State	New South Wales.	Metropolis.	Remainder of State.	New South Wales.
1900	1,222	1,383	2,605	10·08	5·53	7·01
1905	1,530	1,382	2,912	11·11	5·37	7·37
1910	1,530	1,370	2,900	9·44	4·67	6·37
1915	1,480	1,201	2,681	7·09	3·75	5·07
1916	1,334	1,167	2,501	6·40	3·74	4·80
1917	1,383	1,150	2,533	6·82	3·57	4·83
1918	1,460	1,194	2,654	7·48	3·83	5·23
1919	1,385	1,149	2,534	7·41	3·85	5·22
1920	1,513	1,122	2,635	6·77	3·55	4·88

The smaller proportion of illegitimate births in the extra-metropolitan area is doubtless partly due to the fact that prospective mothers journey to the Metropolis, not only for the sake of the advantages of lying-in at one of the public maternity hospitals, but to avoid the publicity of their unfortunate condition.

#### *The Legitimation Act, 1902.*

In 1902 an Act was passed to legitimise children born before the marriage of their parents, provided that no legal impediment to the marriage existed at the time of birth. On registration in accordance with the provisions of the Legitimation Act, any child who comes within the scope of its intentions, born before or after the passing thereof, is deemed to be legitimised from birth by the post-natal union of its parents, and entitled

to the status of offspring born in wedlock. Since the passing of the Act there have been 5,759 registrations. The number in each of the last ten years is shown in the following table:—

Year.	Registrations.	Year.	Registrations.
1910	288	1916	420
1911	394	1917	390
1912	405	1918	447
1913	298	1919	398
1914	393	1920	455
1915	416		

## NATURAL INCREASE.

The excess of births over deaths, or "natural increase," during 1920 was 33,013, giving, with the exception of 1919, the lowest rate since 1903.

The following table shows the natural increase of population during the last ten years for the Metropolis, for the remainder of the State, and for the whole of New South Wales:—

Year.	Natural Increase.					Increase per cent. of Population
	Metropolis.	Remainder of State.	Whole State.			
			Males.	Females.	Total.	
1911	10,856	19,642	14,504	15,994	30,498	1·83
1912	12,459	20,648	15,526	17,581	33,107	1·90
1913	12,597	19,805	15,091	17,311	32,402	1·78
1914	13,218	21,620	16,433	18,405	34,838	1·86
1915	12,682	20,593	15,648	17,627	33,275	1·76
1916	12,700	19,521	15,114	17,107	32,221	1·70
1917	12,760	21,738	16,529	17,969	34,498	1·81
1918	11,664	20,196	15,084	16,776	31,860	1·64
1919	6,778	15,365	9,617	12,526	22 143	1·11
1920	12,923	20,090	15,603	17,410	33,013	1·60

On account of the more favourable death-rates, the rate of natural increase prior to the war period had been improving slightly for about 15 years. The increase per 1,000 of population for the five years, 1915–19, however, was 13 per cent. lower than that for the previous quinquennium; that for 1920 was practically the same as for 1915–19.

Although male births are more numerous than those of females, the increase of population from the excess of births over deaths is greatly in favour of the latter. The male population certainly exceeds the female, but there is a disproportionately large number of deaths among males. There is also a greater mortality among male than among female children, a cause from which alone the natural excess of male births is almost neutralised. During the ten years which closed with 1920, the number of females added to the community by excess of births over deaths exceeded the males by 19,557, or 13·1 per cent.

During the year 1920 the birth-rates of the Australian States compared unfavourably with those of the preceding quinquennium. Consequently the natural increase dropped, as is shown below. The rates are per 1,000 of population.

State.	Natural Increase, 1915-19.	Natural Increase, 1920.
Tasmania ...	17·83	17·61
Queensland ...	17·06	16·47
<i>New South Wales</i> ...	15·99	15·96
New Zealand ...	13·85	15·09
Western Australia ...	15·47	14·45
South Australia ...	14·84	14·27
Victoria ...	11·75	12·82

### DEATHS.

The deaths during 1920 numbered 20,961, equal to a rate of 10·14 per 1,000 of the population, or 6·7 per cent. below the average for the previous five years. Of the total, 12,120 were males and 8,841 females, the rate for the former being 11·48 and for the latter 8·74 per 1,000 living of each of the sexes. The average annual number of deaths from 1870 with the rate per 1,000 of population, in quinquennial periods, was as follows :—

Period.	Average Annual Number of Deaths.			Death-rate per 1,000 of Total Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1870-74	4,391	2,948	7,339	15·58	12·32	13·93
1875-79	6,199	4,360	10,559	17·99	15·10	16·67
1880-84	7,286	5,124	12,410	16·55	14·14	15·46
1885-89	8,461	6,043	14,504	15·43	13·36	14·49
1890-94	8,877	6,344	15,221	14·06	11·77	13·01
1895-99	9,002	6,514	15,516	13·11	10·77	12·01
1900-04	9,195	6,733	15,928	12·65	10·17	11·47
1905-09	9,076	6,583	15,659	11·52	9·04	10·33
1910-14	10,598	7,555	18,153	11·59	9·11	10·41
1915-19	11,919	8,613	20,532	11·64	9·07	10·66
1920	12,120	8,841	20,961	11·48	8·74	10·14

The death-rate has fallen continuously for both sexes, but slightly more among males than females. The death-rate for males is, however, more than 25 per cent. higher than for females, the reason being that males are exposed to greater risks than females, and that male infants are the more delicate. It will be noticed that the death-rate had declined markedly from the period 1885-89 to 1918, coincidently with the decline in the birth-rate. The falling birth-rate influenced the death-rate, inasmuch as it affected the age-constitution of the population by reducing the proportion living at the first five years, at which the mortality is high.

A table of the death-rates per 1,000 in each of the Australian States, and in New Zealand, in 1920, provides an instructive comparison.

State.	1915-19.	1920.
Tasmania ...	9·95	9·67
<i>New South Wales</i> ...	10·66	10·14
New Zealand ...	10·52	10·27
Western Australia ...	9·74	10·28
South Australia ...	10·67	10·44
Queensland ...	10·80	10·63
Victoria ...	11·38	11·13

The deaths during the five years, 1915-19, included those occasioned by the epidemic of influenza in 1919.

*Deaths—Metropolis and Remainder of the State.*

It is not possible to show the exact difference between urban and rural mortality in New South Wales, but an approximate idea may be obtained from a comparison of the experience of the metropolis with that of the remainder of the State, which is, of course, not absolutely rural, as a few large towns are contained therein. Separating the State, however, into these two broad divisions, during the year 1920 the record of deaths for the Metropolis was 9,429, and for the remainder of the State 11,532, equivalent respectively to rates of 10·66 and 9·75 per 1,000 of the living. The average annual number of deaths and the rate per 1,000 in each of these divisions since 1880, in five-year periods, are given in the following table:—

Period.	Metropolis.		Remainder of the State.		New South Wales.	
	Average Number of Deaths.	Ratio per 1,000 Living.	Average Number of Deaths.	Ratio per 1,000 Living.	Average Number of Deaths.	Ratio per 1,000 Living.
1880-84	5,033	20·60	7,377	13·21	12,410	15·46
1885-89	6,181	19·47	8,323	12·18	14,504	14·49
1890-94	5,979	14·83	9,242	12·05	15,221	13·01
1895-99	5,634	12·30	9,882	11·86	15,516	12·01
1900-04	5,845	11·54	10,083	11·42	15,928	11·47
1905-09	5,979	10·53	9,680	10·21	15,659	10·33
1910-14	7,312	10·59	10,841	10·30	18,153	10·41
1915-19	8,727	10·89	11,805	10·49	20,532	10·66
1920	9,429	10·66	11,532	9·75	20,961	10·14

The death-rate has improved steadily both in the Metropolis and in the remainder of the State, but notably so in the former, where it is now very little higher than in the latter, whereas thirty years ago it was 50 per cent. in advance. The improvement dates from the quinquennium beginning with the year 1890, and is coincident with the installation of the modern system of sewage and the enforcement of the provisions of the Dairies Supervision Act of 1886. The marked decline in the rates for each division and for the State as a whole is evident from the fact that the metropolitan rate for the period 1885-9 was 19·5 per 1,000, and for the year 1918 it was 10·02, or a difference of 50 per cent.; for the same periods the rates for the remainder of the State were respectively 12·2 and 9·8, or a difference of 19 per cent.; and for the whole State, 14·5 and 9·9, or a difference of 32 per cent. The epidemic of influenza in 1919 reduces the value of a comparison such as above.

THE MORTALITY OF INFANTS AND YOUNG CHILDREN.

A further measure of the mortality rates in the Metropolis and in the remainder of the State is obtained from a comparison of the death-rates of infants, which affords a most sensitive test.

*Children under 1 Year.*

During the year 1920 the children who died before completing the first year of life numbered 3,770, equivalent to a rate of 69·8 per 1,000 births. This rate is only 3·5 per cent. lower than that experienced in 1919, although the rate in that year was affected by the epidemic of influenza. Notwithstanding the high rate for 1919, the 1920 rate, owing to an excess of deaths from whooping-cough and diarrhoea and enteritis, is 7·7 per cent. above that

for the five years, 1915-19. To the total the Metropolis contributed 1,658 deaths, or 74·2 per 1,000 births, and the remainder of the State 2,112, or 66·8 per 1,000 births.

The following table shows the average annual number of deaths of children under 1 year of age, in the metropolis and in the remainder of the State, and the proportion per 1,000 births, in quinquennial periods since the year 1880:—

Period.	Metropolis.		Remainder of State.		New South Wales.	
	Deaths under 1.	Rate per 1,000 Births.	Deaths under 1.	Rate per 1,000 Births.	Deaths under 1.	Rate per 1,000 Births.
1880-84	1,707	174·0	1,956	94·9	3,663	120·4
1885-89	2,168	164·6	2,256	95·2	4,424	120·0
1890-94	1,908	138·8	2,471	95·8	4,379	110·7
1895-99	1,646	134·4	2,572	103·7	4,218	113·9
1900-04	1,416	111·2	2,399	96·9	3,815	101·7
1905-09	1,255	86·7	2,035	74·5	3,290	78·7
1910-14	1,437	75·2	2,211	71·1	3,648	72·7
1915-19	1,373	68·5	1,959	62·6	3,332	64·9
1920	1,658	74·2	2,112	66·8	3,770	69·8

The remarkable improvement in the infantile mortality rate in the metropolis is partly due to the measures adopted to combat preventable diseases by more rigid health laws, and by education. The Infectious Disease Supervision Act became law in 1881, and in 1896 the Public Health Act was passed, while in 1902 all acts relating to Public Health were consolidated in the Public Health Act, 1902. A scheme for the preservation of infant health was formulated by the Sydney Municipal Council in 1903, and instructional pamphlets were circulated for the guidance of mothers in the care and feeding of young children. In the following year trained women inspectors were appointed to visit mothers in the populous parts of the city and in the surrounding suburbs. During the year 1904 infantile mortality showed a marked improvement on the rates experienced for about thirty years. A reference to the principal causes of death during the years immediately prior to and after the year in question will show that in all causes in which care and knowledge could have effect, a decrease was experienced.

Thus the mortality from diarrhoea and enteritis dropped from 36·90 per 1,000 births in 1903 to 21·31 in 1904; tubercular diseases from 3·06 to 1·58; and congenital debility from 15·54 to 12·98.

The decline in infantile mortality has persisted, especially in diarrhoeal diseases, as will be seen from the following table, which gives the mortality rate per 1,000 births in each year since 1900 from diarrhoeal diseases, and from the total less those diseases:—

Year.	Deaths under 1 year of age per 1,000 Births.			Year.	Deaths under 1 year of age per 1,000 Births.		
	Diarrhoeal Diseases.	All other Diseases.	Total.		Diarrhoeal Diseases.	All other Diseases.	Total.
1900	29·37	73·90	103·27	1911	16·82	52·67	69·49
1901	27·46	76·28	103·74	1912	22·37	48·93	71·30
1902	33·09	76·65	109·74	1913	23·27	55·07	78·34
1903	36·90	73·45	110·35	1914	19·83	49·84	69·72
1904	21·31	61·11	82·42	1915	17·28	50·85	68·13
1905	18·76	61·79	80·55	1916	15·02	52·82	67·84
1906	21·39	53·14	74·53	1917	10·79	46·69	57·48
1907	21·23	67·41	88·64	1918	9·25	49·92	59·17
1908	21·89	53·90	75·79	1919	17·45	54·82	72·27
1909	21·86	52·42	74·28	1920	17·42	52·43	69·85
1910	20·54	54·07	74·61				

In 1920 diarrhoeal diseases caused 24·9 per cent. of the deaths of infants under 1 year of age, but in 1903 the proportion was 33·4 per cent.

Further efforts to reduce infantile mortality led to the establishment of Baby Clinics in Sydney and Newcastle in 1914, and subsequently in Broken Hill. Details regarding the Baby Clinics will be found in a later chapter.

It is worthy of note that the experience of all the other States of the Commonwealth was similar to that of New South Wales, inasmuch as the reduction in infantile mortality rates which occurred in 1904 has been maintained, and it was due to a large falling-off in the number of deaths from diarrhoeal diseases.

The death-rate is higher for male infants than for females, the rates in 1920 being 77·7 and 61·6 per 1,000 births respectively. The rates for each sex are shown in the following table in quinquennial periods since 1880:—

Period.	Males.		Females.	
	Deaths under 1.	Rate per 1,000 Births.	Deaths under 1.	Rate per 1,000 Births.
1880-84	1,992	127·9	1,671	112·5
1885-89	2,405	127·2	2,019	112·3
1890-94	2,413	118·7	1,966	102·3
1895-99	2,304	121·4	1,914	105·9
1900-04	2,077	108·5	1,738	94·6
1905-09	1,832	8·56	1,458	71·5
1910-14	2,037	79·2	1,611	65·8
1915-19	1,892	71·9	1,440	57·6
1920	2,153	77·7	1,617	61·6

The death-rate of female infants has improved more than the male rate, having declined from 112·5 per 1,000 births in 1880-84 to 61·6 in 1920, or by 45·2 per cent., while the male rate has decreased from 127·9 per 1,000 births to 77·7, or by 39·2 per cent.

During the period reviewed, the excess of the male infantile deaths fluctuated from 16·4 per 1,000 births in the quinquennium 1890-94 to 13·4 in 1910-14. In 1920 the excess reached 16·1 per 1,000 births.

Reference to the table on page 141 shows that the death-rate for male infants is higher than for female infants in regard to the causes to which the majority of infantile deaths are attributed, *i.e.*, premature birth, infantile debility, diarrhoea and enteritis.

Of the total number of deaths of infants under 1 year of age about one-third occur within a week of birth; at the end of the first month the proportion is over two-fifths; and at the end of three months, three-fifths. Approximately, one child in every 42 born dies within a week of birth. The following statement shows for 1920, in comparison with the average of the preceding quinquennium, the deaths per 1,000 births during each of the first four weeks after birth, and then for each successive month. The experience in the



Metropolis is distinguished from that in the remainder of the State, the sexes are taken together, and for the year 1920 the illegitimate children are distinguished from the legitimate for the State as a whole.

Age at Death.	Metropolis.		Remainder of State.		New South Wales.				
	1915-19.	1920.	1915-19.	1920.	1915-19.	1920.			
						Legitimate.	Illegitimate.	Total.	
Under 1 week ... ..	24.4	23.1	24.6	24.5	24.5	23.4	35.3	23.9	
1 week ... ..	3.6	4.4	4.0	3.7	3.8	3.7	9.5	4.0	
2 weeks ... ..	2.2	2.7	2.4	2.2	2.4	2.3	4.5	2.4	
3 „ ... ..	1.9	2.0	1.8	2.0	1.8	1.8	4.2	2.0	
Total under 1 month	32.1	32.2	32.8	32.4	32.5	31.2	53.5	32.3	
1 month ... ..	5.7	7.2	5.2	5.5	5.4	5.9	12.5	6.2	
2 months ... ..	4.5	5.3	3.3	4.2	3.8	4.2	14.4	4.6	
3 „ ... ..	4.3	5.4	2.8	3.0	3.4	3.5	12.9	4.0	
4 „ ... ..	3.7	5.2	2.8	3.6	3.1	4.0	9.1	4.2	
5 „ ... ..	2.9	3.7	2.5	3.0	2.7	2.9	9.5	3.3	
6 „ ... ..	3.2	3.5	2.5	2.9	2.8	3.0	6.8	3.2	
7 „ ... ..	2.6	2.4	2.2	2.8	2.3	2.5	4.6	2.6	
8 „ ... ..	2.5	2.1	2.4	2.1	2.4	2.0	4.6	2.1	
9 „ ... ..	2.4	2.1	2.1	2.3	2.2	2.1	3.4	2.2	
10 „ ... ..	2.3	2.4	1.9	2.4	2.1	2.4	3.0	2.4	
11 „ ... ..	2.3	2.7	2.1	2.6	2.2	2.7	2.7	2.7	
Total under 1 year ...	68.5	74.2	62.6	66.8	64.9	66.4	137.0	69.8	

In the first week of life the mortality is six times as great as in the second, and generally more than ten times as great as in the third or fourth. During the second month the mortality falls rapidly, and thereafter gradually. The rate of infantile mortality is higher in the Metropolis than in the remainder of the State. In 1920 the rate per 1,000 births was 74.2 in the Metropolis, and 66.8 in the remainder of the State. During the previous quinquennial period the Metropolitan rate was 9.4 per cent. higher than that for the remainder of the State.

The table shows a great waste of life among illegitimate children, the mortality under 1 year being 137.0 per 1,000, as compared with 66.4 among legitimate children. The largest proportional excess is not immediately after birth, but about three months later. Taking the experience of 1920 as a guide, the mortality of illegitimates exceeds that of legitimates by about

50 per cent. during the first week of life. The first month shows an excess of 70 per cent., the second over 100, the third 250, and the fourth slightly more. After the fourth month the excess quickly drops, until at the end of the first year of life it practically disappears.

A further dissection of the experience in regard to infantile mortality since 1901, according to the age at death, discloses the striking fact that relatively deaths under one week have actually increased, although the infantile mortality rate as a whole has declined considerably. The following table shows at various ages in the first twelve months the number of deaths per 1,000 births. Since 1901 death-rates of children under 1 week have increased by 17 per cent., while the rates of all children under 12 months have decreased by 33 per cent. At ages over 1 week the mortality rate has declined by 30 to 50 per cent.

Year.	Rate of Mortality per 1,000 Births.						
	Under 1 week.	1 week and under 1 month.	1 month and under 3 months.	Total under 3 months.	3 months and under 6.	6 months and under 12.	Total under 1 year.
1901	20.5	12.2	22.1	54.8	22.4	26.5	103.7
1902	21.3	12.3	22.2	55.8	24.8	29.1	109.7
1903	21.2	11.3	19.5	52.0	26.3	32.1	110.4
1904	21.8	9.7	14.9	46.4	15.8	20.2	82.4
1905	24.3	10.9	13.0	48.2	15.9	16.5	80.6
1906	21.8	9.0	11.8	42.6	14.3	17.6	74.5
1907	23.1	11.3	17.8	52.2	15.8	20.6	88.6
1908	21.5	9.5	11.9	42.9	15.9	17.0	75.8
1909	21.3	9.8	11.6	42.7	14.9	16.7	74.3
1910	21.1	9.2	13.4	43.7	14.3	16.6	74.6
1911	22.3	9.9	11.9	44.1	11.7	13.7	69.5
1912	21.5	8.4	10.6	40.5	13.1	17.7	71.3
1913	22.9	9.5	11.8	44.2	14.7	19.4	78.3
1914	23.5	8.8	10.1	42.4	11.6	15.7	69.7
1915	25.1	7.6	9.4	42.1	9.3	16.7	68.1
1916	23.5	8.3	10.3	42.1	10.0	15.7	67.8
1917	22.9	7.4	8.5	38.8	7.6	11.1	57.5
1918	25.1	7.8	8.0	40.9	7.9	10.4	59.2
1919	26.2	9.0	9.6	44.8	11.5	16.0	72.3
1920	23.9	8.4	10.8	43.1	11.5	15.2	69.8

The following statement furnishes a comparison of the rates of infantile mortality in the Australian States, in New Zealand, and in various other countries. The rates indicate the deaths under one year per 1,000 births.

State.	Year.	Rate.	Country.	Year.	Rate.
Queensland ...	1920	63.4	Spain ...	1919	192
New South Wales ...	"	69.8	Jamaica ...	1917	185
Victoria ...	"	73.8	Italy ...	"	140
Tasmania ...	"	65.2	Quebec ...	"	136
South Australia ...	"	67.1	Finland ...	"	134
Western Australia ...	"	66.1	Scotland ...	1919	102
New Zealand ...	"	50.6	*United States ...	1918	101
			Ontario, Canada ...	1919	96
			England and Wales ...	"	89
			Switzerland ...	1918	88
			Ireland ...	1919	87
			South Africa ...	"	80
			Norway ...	1917	54
			Netherlands ...	1919	50

Of the rates shown in the foregoing table, that for New Zealand is the best; but the rates for Australasia generally are greatly superior to those prevailing in most other countries for which records are available.

*Children under 5 Years.*

As among children under 1 year of age, so there has been a great improvement in the death-rate of children under 5 years of age.

The following table shows the mortality in each division, in periods of five years since 1890, of children under 5 years of age :—

Period.	Metropolis		Remainder of State.		New South Wales.	
	Average Annual Number.	Rate per 1,000 Living.	Average Annual Number.	Rate per 1,000 Living.	Average Annual Number.	Rate per 1,000 Living.
1890-94	2,674	48·45	3,546	32·06	6,220	37·52
1895-99	2,206	40·77	3,487	30·97	5,693	34·15
1900-04	1,846	35·17	3,210	29·64	5,056	31·44
1905-09	1,612	27·61	2,723	23·39	4,335	24·80
1910-14	1,895	25·47	2,986	21·77	4,881	23·07
1915-19	1,905	20·59	2,771	18·56	4,676	19·34
1920	2,341	25·35	2,981	20·70	5,322	22·52

At every period shown in the table the Metropolitan rate was the higher, being in some cases over 50, and never below 7 per cent. in excess until 1917, when the excess was only 1·5 per cent. But the improvement in the Metropolis has been greater than in the remainder of the State, the rate having decreased since 1890 by 48 per cent. in the former, and in the latter by 35 per cent. Outside the Metropolis the rate did not vary to any significant extent until 1904, when there was a marked decline, which has been continuous. The low rate of mortality in 1920, compared with the high rate of a quarter of a century ago, represents a saving of 23 lives in every 1,000 children under 5 years of age in the Metropolis, and of 11 in the remainder of the State.

The following table shows for 1920, and for the preceding quinquennial period, the death-rates of illegitimate children under one year and under five years of age, as compared with those of legitimate children of like ages :—

Age.	Legitimate.		Illegitimate.		Total.	
	Deaths.	Rate per 1,000 Living.	Deaths.	Rate per 1,000 Living.	Deaths.	Rate per 1,000 Living.
Under 1 year—						
1915-19	14,956	61·4	1,703	132·0	16,659	64·9
1920	3,409	66·4	361	137·0	3,770	69·8
Under 5 years—						
1915-19	21,326	18·49	2,056	36·96	23,382	19·34
1920	4,890	21·70	432	39·45	5,322	22·52

The foregoing figures show the poor chance of survival afforded to the illegitimate as compared with that of the legitimate infant, since at each of the ages specified the death-rate of the former was twice that of

the latter; and it is a fact of the utmost gravity that of the children illegitimately born, nearly one-seventh die before completing the first year of existence.

*Causes of Infantile Mortality.*

The mortality of infants in New South Wales has been exceptionally low since 1904. An upward movement in 1907, when the rate was higher than in any of the three preceding years, was followed by a decline in the following year, a decline that was continued until 1911. In 1912 there was a slight increase as compared with the year before, but the rate was considerably lower than the average for the preceding quinquennium, notwithstanding the fact that it was a period of low mortality. In 1913 the rate was 78·3, and the highest since 1907. From 1914 the rate steadily declined, but in 1919, on account of the epidemic of influenza, an increase was experienced, the rate being 72·3. The rate for 1920 was 69·8 per 1,000, or 8 per cent. above the rate for the quinquennium preceding 1919.

Children are more susceptible to the attacks of disease in the earliest years of life than later, and about 1,000 children out of every 10,000 born in New South Wales die before reaching their fifth year. Since the rates for preventible diseases are highest, there is no doubt that many children succumb through parental ignorance of the proper food or treatment required.

The following statement shows the principal causes of death among children and the rates under 1 per 1,000 births and under 5 per 1,000 living in 1920 and in the five years 1915-19, distinguishing deaths in the Metropolis from those in the remainder of the State:—

Cause of Death.	Deaths under 1 per 1,000 Births.						Deaths under 5 per 1,000 Living.					
	Metropolis.		Remainder of State.		New South Wales.		Metropolis.		Remainder of State.		New South Wales.	
	1915-1919.	1920.	1915-1919.	1920.	1915-1919.	1920.	1915-1919.	1920.	1915-1919.	1920.	1915-1919.	1920.
Measles .. .. .	0·5	0·9	0·3	0·3	0·4	0·6	0·4	1·0	0·2	0·4	0·3	0·7
Scarlet Fever .. ..	0·1	..	..	..	..	..	0·1	..	0·1	..	0·1	..
Whooping-cough .. ..	1·4	5·4	1·7	2·9	1·6	3·9	0·5	2·3	0·6	1·0	0·6	1·5
Diphtheria and Croup ..	0·7	0·5	0·3	0·2	0·5	0·3	0·7	0·8	0·7	0·8	0·7	0·8
Influenza .. .. .	0·6	0·3	0·6	0·1	0·6	0·1	0·4	0·1	0·3	0·1	0·3	0·1
Tuberculosis—Meninges..	0·3	..	0·2	0·1	0·2	0·1	0·2	0·2	0·1	0·1	0·2	0·1
"    Abdominal	0·1	..	0·1	0·1	0·1	..	..	..	..	..	..	..
"    Other Organs	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·2	0·1	0·1	0·1	0·1
Syphilis .. .. .	0·7	0·8	0·3	0·2	0·4	0·5	0·2	0·2	0·1	0·1	0·1	0·1
Meningitis .. .. .	0·8	0·4	0·7	0·7	0·7	0·6	0·5	0·2	0·3	0·3	0·4	0·3
Convulsions .. .. .	1·3	1·0	2·6	1·6	2·1	1·3	0·4	0·3	0·7	0·5	0·6	0·4
Bronchitis .. .. .	1·1	1·2	2·0	1·9	1·6	1·6	0·3	0·3	0·5	0·5	0·5	0·5
Broncho-pneumonia .. ..	4·0	4·6	2·7	3·6	3·2	4·0	1·5	1·8	1·0	1·2	1·2	1·4
Pneumonia .. .. .	1·7	1·0	1·6	1·3	1·6	1·2	0·8	0·7	0·7	0·4	0·7	0·6
Diarrhoea and Enteritis ..	16·6	19·8	12·2	15·7	14·0	17·4	4·9	6·7	4·0	5·3	4·3	5·9
Congenital Malformations	4·2	4·6	3·3	3·5	3·7	4·0	1·0	1·3	0·8	0·9	0·8	1·0
Infantile Debility .. ..	7·7	5·4	7·4	7·5	7·5	6·6	1·7	1·3	1·5	1·6	1·6	1·5
Premature Birth .. ..	18·5	19·7	17·0	17·3	17·6	18·3	4·0	4·8	3·6	3·8	3·7	4·2
All Others .. .. .	8·2	8·5	9·5	9·7	9·0	9·2	2·9	3·2	3·3	3·4	3·1	3·3
Total .. .. .	68·5	74·2	62·6	66·3	64·9	69·8	20·6	25·4	18·6	20·7	19·3	22·5

The high mortality of infants is largely due to the deaths of children who, either from immaturity or inherited debility, are born unfit for the struggle for existence. Of children under 1, the deaths from these causes in 1920 were equal to 28.9 per 1,000 births, or 41 per cent. of the total deaths of children under 1. A table already given shows that the mortality during the first month of life is nearly half the total mortality during the whole of the first year, and 68 per cent. of this half proportion of the total mortality of the year was due in 1920 to deaths from congenital debility or defects.

Among children under one year, diarrhoea and enteritis were responsible for 17.4 deaths per 1,000 births, and infectious diseases for 4.9, of which whooping-cough caused 3.9 and measles 0.6. Respiratory diseases are especially fatal to children; bronchitis in 1920 caused 1.6, broncho-pneumonia 4.0, and pneumonia 1.2 deaths per 1,000 births. The death-rate for these respiratory diseases was slightly below the rate for the previous quinquennium. The death-rate from convulsions was 1.3, from tuberculous diseases 0.2, and meningitis (not tuberculosis) 0.6 per 1,000 births.

The causes of deaths among children under 5 years of age are the same as among children under 1, namely, diarrhoea and enteritis, premature birth, infantile debility, broncho-pneumonia, influenza, malformations, pneumonia, convulsions, whooping-cough, diphtheria, bronchitis, meningitis, tuberculosis, syphilis, measles, and scarlet fever.

A comparison has been made of the causes of death of infants in the different divisions of the State. The variation shown in the mortality-rate is from 49.9 in the Riverina to 97.2 in the Western Division. The following table shows the number of deaths of infants under 1 year of age per 1,000 births for principal diseases in the principal divisions of the State, based on the experience of the five years, 1915-19.

Cause of Death.	Metropolis.	Balance of Cumberland.	North Coast.	Hunter and Manning.	South Coast.	Northern Table-land.	Central Table-land.	Southern Table-land.	North-Western Slope.	Central-Western Slope.	South-Western Slope.	North-Western Plain.	Central-Western Plain.	Riverina.	Western Division.	Total Country.	Whole State
Epidemic Diseases ..	3.3	2.9	2.5	3.0	2.1	4.4	4.5	5.5	2.1	3.7	1.8	3.0	3.1	3.1	6.9	3.3	3.3
Tuberculous Diseases ..	.5	.4	.4	.5	.4	.2	.3	.3	.7	.4	.4	.2	.3	.2	1.1	.4	.5
Veneral Diseases ..	.3	.9	.3	.2	.2	.1	.1	.1	.4	.1	.2	.3	.4	.4	.4	.2	.5
Meningitis ..	.8	.3	.5	.2	.7	.6	1.1	.6	.3	.3	.4	1.3	.6	.5	.4	.7	.7
Convulsions of Infants ..	1.3	3.2	2.7	2.4	2.7	3.5	2.2	2.9	3.4	3.0	2.1	1.0	3.1	1.4	3.6	2.6	2.0
Bronchitis ..	1.1	1.5	1.0	2.1	2.5	3.3	2.7	2.1	2.1	2.1	1.5	3.0	2.2	1.2	1.9	2.0	1.6
Pneumonia and Pleurisy ..	5.8	4.4	3.9	3.7	5.8	4.5	5.2	4.4	3.8	3.8	4.1	3.3	5.5	4.1	4.7	4.3	4.9
Gastritis and Diarrhoea and Enteritis.	17.0	12.1	8.5	15.6	9.7	8.9	13.6	11.4	12.3	13.9	8.3	14.5	9.8	10.2	33.6	12.9	14.5
Hernia ..	.6	.3	.6	.5	.8	.5	.6	.9	1.1	.5	.2	.3	.9	.4	.9	.6	.6
Congenital Malformations ..	4.3	3.8	3.3	3.2	2.4	3.6	3.9	3.1	4.5	2.7	3.4	1.8	2.1	2.3	4.5	3.3	3.7
Congenital Debility and Premature Birth.	26.2	21.8	19.5	28.3	21.6	21.5	27.8	26.8	25.1	23.5	22.5	25.4	25.7	17.0	33.1	24.4	25.1
Accidents of Birth and Other Diseases of Infancy.	3.8	3.0	5.0	4.5	6.5	3.8	4.3	4.7	5.4	4.6	4.0	3.8	5.2	4.9	2.3	4.4	4.2
Accidents ..	.5	1.2	.7	.9	.6	.1	.3	.8	.5	.8	.8	1.8	2.1	1.1	1.3	.8	.7
All other Diseases ..	2.5	2.2	2.7	2.3	2.5	3.2	3.3	3.1	2.1	3.8	2.6	2.3	3.7	2.5	2.5	2.7	2.6
Total ..	68.5	58.0	51.6	68.0	58.5	57.1	69.9	66.6	33.9	63.5	52.2	61.9	64.6	49.9	97.2	62.6	64.9

Medical opinion is that the districts which have a favourable summer rainfall will have the fewest cases of infantile diarrhoea, and that those districts which have not industrial centres will have a lower rate for premature birth and congenital debility than those which have; also, that in rural districts children will be reared under the most favourable circumstances.

These opinions are borne out by the preceding table. The highest rates are in the Metropolis, the Hunter and Manning, the Central Tableland, and the Western Division, all containing mining or industrial centres. The lowest rates are in the North Coast and the Riverina—purely rural divisions.

*The Deaths of Illegitimate Children.*

The following table shows the causes of death of illegitimate as compared with those of legitimate children. The figures represent the deaths of children under 1 year per 1,000 births in New South Wales during the year 1920.

Cause of Death.	Deaths under 1 per 1,000 Births.				
	Legitimate.	Illegitimate.	Males.	Females.	Total.
Measles ... ..	0·52	1·14	0·65	0·46	0·56
Scarlet Fever ... ..	0·02	...	...	0·04	0·02
Whooping-cough ... ..	3·87	4·93	3·54	4·34	3·93
Diphtheria and Croup ... ..	0·31	0·76	0·40	0·27	0·33
Influenza ... ..	0·15	...	0·07	0·23	0·15
Tuberculosis—Meninges ... ..	0·12	...	0·14	0·08	0·11
„ Abdominal ... ..	0·04	...	0·04	0·04	0·04
„ Other Organs ... ..	0·12	...	0·14	0·08	0·11
Syphilis ... ..	0·37	1·90	0·47	0·42	0·44
Meningitis ... ..	0·56	0·38	0·61	0·49	0·56
Convulsions ... ..	1·29	2·28	1·66	0·99	1·33
Bronchitis ... ..	1·54	2·28	1·80	1·33	1·57
Broncho-pneumonia ... ..	3·86	6·83	3·72	4·30	4·00
Pneumonia ... ..	1·21	0·76	1·12	1·26	1·19
Diarrhoea and Enteritis ... ..	15·80	48·95	18·83	15·92	17·42
Congenital Malformations ... ..	3·82	6·45	4·15	3·73	3·95
Infantile Debility ... ..	6·29	13·28	7·54	5·68	6·63
Premature Birth ... ..	17·67	30·74	21·53	14·89	18·30
All Others ... ..	8·84	16·32	11·25	7·05	9·21
Total ... ..	66·40	137·00	77·66	61·60	69·85

A greater mortality is characteristic of illegitimate than of legitimate children. Exclusive of diseases inherited from contaminated parents, continued neglect and lack of care are largely responsible for these higher death-rates of the illegitimate. Infantile debility, including congenital malformations and premature birth, showed 50·47 deaths per 1,000 births, as against the legitimate rate of 27·78; diarrhoea and enteritis 48·95, as compared with 15·80; respiratory diseases 9·87, as compared with 6·61; syphilis 1·90, as compared with 0·37; and epidemic diseases 6·83, as compared with 4·87.

A comparison of the rates for each sex shows that the male rates were the higher for all the principal causes of death, except whooping-cough, broncho-pneumonia, and pneumonia.

CAUSES OF DEATH.

The system of classification adopted in this most important section of vital statistics is that employed by the Registrar-General in England, which is in accordance with the International List of Causes of Death, based on the second decennial revision by the International Commission at Paris in 1909.

In the following table will be found particulars of the number of deaths due to the principal causes during the year 1920 and the previous quinquennium, due allowance having been made for the increase in population :—

Causes of Death.	Number, 1920.	Average Number, 1915-19.	Increase (+) or Decrease (-) in 1920.	Causes of Death.	Number, 1920.	Average Number, 1915-19.	Increase (+) or Decrease (-) in 1920.
			per cent.				per cent.
Typhoid Fever ...	132	166	- 20·5	Bronchitis ...	585	606	- 3·5
Measles ...	189	109	+ 73·4	Pneumonia ...	1,438	1,389	+ 3·5
Scarlet Fever ...	24	58	- 58·6	Other Diseases of the Respiratory			
Whooping-cough ...	369	149	+ 147·7	System ...	290	312	- 7·1
Diphtheria ...	264	252	+ 4·8	Diseases of the			
Influenza ...	259	1,524	- 83·0	Stomach ...	142	170	- 16·5
Plague ...	...	1	...	Diarrhoea and En- teritis ...	1,714	1,393	+ 23·0
Erysipelas ...	31	14	+ 121·4	Appendicitis ...	165	156	+ 5·8
Other Epidemic				Hernia, Intestinal			
Diseases ...	35	70	- 50·0	Obstruction ...	181	191	- 5·2
Phthisis ...	1,118	1,198	- 6·7	Cirrhosis of Liver	130	138	- 5·8
Tubercular				Peritonitis ...	40	53	- 24·5
Meningitis ...	68	72	- 5·6	Other Diseases of the Digestive			
Other Tubercular				System ...	221	211	+ 4·7
Diseases ...	116	104	+ 11·5	Bright's Disease, Acute and Chronic	925	1,013	- 8·7
Cancer ...	1,729	1,643	+ 5·2	Other Genito-Urin- ary Diseases ...	322	322	...
Diabetes ...	222	227	- 2·2	Puerperal Septicæ- mia ...	110	103	+ 6·8
Alcoholism ...	47	60	- 21·7	Other Puerperal			
Other General Dis- eases ...	536	607	- 11·7	Diseases ...	221	202	+ 9·4
Meningitis ...	114	132	- 13·7	Prematurity ...	988	966	+ 2·3
Cerebro-spinal				Developmental			
Meningitis ...	27	93	- 71·0	Diseases ...	873	867	+ 0·7
Infantile Paralysis	12	13	- 7·7	Senility ...	1,289	1,323	- 2·6
Cerebral Hæmorr- hage ...	697	672	+ 3·7	Suicide ...	257	227	+ 13·1
Convulsions of				Accident ...	937	1,006	- 6·9
Infants ...	96	149	- 35·6	All other Causes...	489	462	+ 5·8
Other Diseases of the Nervous Sys- tem ...	671	703	- 4·6				
Diseases of the Heart ...	2,292	2,295	- 0·1				
Other Diseases of the Circulatory System ...	596	513	+ 16·2				
				Total ...	20,961	21,934	- 4·4

The number of deaths in 1920 was 973 (or 4·4 per cent.) less than shown by the experience of the previous five years; measles, whooping-cough, erysipelas, and diarrhoea and enteritis showed marked increases on the average number for the previous quinquennium; on the other hand, influenza and cerebro-spinal meningitis were much below the average.

#### *Typhoid Fever.*

The number of deaths from typhoid fever during the year 1920 was 132, equivalent to 0·64 per 10,000 living. The number was 20·5 per cent. less than the average for the preceding five years. This is essentially a preventable disease, and does not obtain a foothold where a proper system of sanitation has been installed and ordinary health precautions have been taken; a great improvement has been attained during the past three decades.

The number of deaths from typhoid fever, and the equivalent rates per 1,000 of population since 1884, are stated below.

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	1,356	5.12	1,115	5.13	2,471	5.13
1889-93	959	3.11	714	2.74	1,673	2.94
1894-98	1,107	3.27	731	2.46	1,838	2.89
1899-1903	1,054	2.93	733	2.25	1,787	2.61
1904-08	748	1.93	507	1.42	1,255	1.69
1909-13	773	1.75	464	1.15	1,237	1.47
1914-18	569	1.17	330	0.71	899	0.95
1919	76	0.75	53	0.54	129	0.64
1920	81	0.77	51	0.50	132	0.64

The decrease after 1888 was very marked, and may be traced to the operation of the Dairies Supervision Act, which became law in 1889. From that year until 1903 the rate was fairly even, and did not greatly decline, but during the next quinquennium there was a further considerable decrease in both the number and the rate of deaths from typhoid.

The following statement shows the rate for the Metropolis and for the remainder of the State during the last twenty-seven years. Owing to a superior system of sewage, and to the greater attention given to sanitary inspection, the rate of the Metropolis has almost invariably been lower than that of the remainder of the State, though it was higher during 1919.

Period.	Metropolis.		Remainder of State.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1894-98	507	2.26	1,331	3.24
1899-1903	426	1.72	1,361	3.12
1904-08	334	1.21	921	1.97
1909-13	363	1.10	874	1.70
1914-18	319	0.81	580	1.04
1919	61	0.72	68	0.59
1920	48	0.54	84	0.71

Deaths from typhoid occur with greater frequency in the summer and autumn. In 1920 there were 45 deaths during the summer months of December, January, and February; and 46 during the autumn months of March, April, and May.

#### *Smallpox.*

After a considerable period of immunity, smallpox, of the mildest type, became epidemic in Sydney during the year 1913. In the absence of severe symptoms, the disease escaped detection until it had become distributed throughout the Metropolitan area, and thence, in a few instances, to other parts of the State. The total number of cases notified during the outbreak, was 2,398, of which 119 occurred in 1917, the last case being notified in October of that year. Five patients died, but in each case death was probably due to some other cause.

Vaccination is not compulsory in New South Wales, and a very small proportion of the people submit voluntarily to the operation unless an epidemic threatens. This cavalier attitude towards the dread scourge of smallpox may be attributed to a general feeling of security from infection on account of the distance from those countries in which the disease is more or less endemic. The duration of voyages from such places has been



considerably diminished, and consequently the risk of sufferers from smallpox entering the State or the Commonwealth undetected by the inspectors of the Quarantine Department has been greatly increased.

During the year 1913 about 425,000 persons submitted voluntarily to vaccination.

#### *Measles.*

During the year 1920 the deaths due to measles amounted to 189, a number equal to a rate of 0·91 per 10,000 living. The rate for males was 0·90 and for females 0·93. The following statement shows the deaths from this cause, and the rate per 10,000 living, for each sex, arranged in quinquennial periods since 1884 :—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	166	0·63	165	0·76	331	0·69
1889-93	393	1·28	369	1·41	762	1·34
1894-98	338	1·00	324	1·09	662	1·04
1899-1903	160	0·44	219	0·67	379	0·55
1904-08	82	0·21	107	0·30	189	0·25
1909-13	309	0·70	267	0·66	576	0·68
1914-18	301	0·62	221	0·48	522	0·55
1919	4	0·04	4	0·04	8	0·04
1920	95	0·90	94	0·93	189	0·91

The rate in 1920 shows a decrease of 20·5 per cent. as compared with that of the preceding quinquennium. The high rates during the second and third quinquennial periods, and in the year 1915, were due to severe outbreaks in 1893, 1898, and 1915.

Measles is a disease chiefly affecting children, and is periodically epidemic. It was epidemic in 1898-9, when 719 deaths were recorded; in 1912, when there were 371 fatal cases; and in 1915, when there were 324. Of the number first cited, 233 were deaths of children under 5 years of age, and 54 were those of children under 1 year of age. During the year 1920 deaths from measles of children under 1 year of age numbered 1, and 3 of children under 5 years of age.

#### *Scarlet Fever.*

In 1920 the number of deaths from this disease was 24, equivalent to a rate of 0·12 per 10,000 of the population. The number of deaths in the Metropolis was 6, and in the remainder of the State 18—showing respectively rates of 0·07 and 0·15 per 10,000. The rate for 1920 of deaths from this cause was 59 per cent. below the rate for the preceding quinquennium. Since 1884 the deaths from scarlet fever and the rates for each sex have been as follow :—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	287	1·08	342	1·57	629	1·30
1889-93	185	0·60	236	0·90	421	0·74
1894-98	162	0·48	218	0·73	380	0·60
1899-1903	84	0·23	114	0·35	198	0·29
1904-08	88	0·23	91	0·26	179	0·24
1909-13	41	0·39	57	0·14	98	0·12
1914-18	112	0·23	161	0·35	273	0·29
1919	7	0·07	10	0·10	17	0·08
1920	14	0·13	10	0·10	24	0·12

Like measles, scarlet fever is an epidemic disease which mainly affects children, the rate generally being somewhat higher for females than for males. During 1920 it caused the deaths of 11 children under the age of 5 years, 4 of whom were females. Though not nearly so fatal as formerly, its sporadic recrudescence demands constant vigilance on the part of the authorities responsible for the health of the State. The death-rate from this cause of mortality has fluctuated since the years 1893 and 1894, when it was very heavy; the rate has ranged from 0.06 in 1912 to 0.63 in 1898.

#### *Whooping-cough.*

Whooping-cough is another disease which mainly affects children, and to which, like scarlet fever, females are more susceptible than males. During the year 1920 the deaths from this cause numbered 369, or, with the exception of 1907, more than any year since 1878. The deaths included 167 males and 202 females. Of the total number, 212 were infants, and of the remainder all but 12 were under 5 years of age. The rate was 1.78 per 10,000 living, or 148 per cent. above the average of the preceding quinquennium. The deaths and rates for each sex since 1884 are shown below.

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	327	1.24	472	2.17	799	1.66
1889-93	495	1.61	666	2.55	1,161	2.04
1894-98	343	1.01	502	1.69	845	1.33
1899-1903	573	1.59	726	2.23	1,299	1.90
1904-08	369	0.95	445	1.25	814	1.10
1909-13	377	0.86	436	1.09	813	0.97
1914-18	335	0.69	282	0.82	717	0.75
1919	60	0.59	73	0.74	133	0.66
1920	167	1.58	202	2.00	369	1.78

Whooping-cough may justly be regarded as a permanent menace and a constantly recurring ailment of infancy and childhood, for the table shows that periods of decline have generally been followed by increases in the death-rate, which is maintained by epidemic outbreaks, one such occurring in 1907, when 594 cases proved fatal, and the death-rate was the highest since 1878. An examination of the table on page 158 showing the seasonal prevalence of diseases indicates that whooping-cough is most fatal during the months of October, November, December, and January.

#### *Diphtheria and Croup.*

Diphtheria, under which heading membranous croup is included, was the cause of 256 deaths in 1920, while croup, so defined, caused 8. The rate for the total (264) was 1.28 per 10,000 living, or 5 per cent. above the rate for the preceding quinquennium. Deaths from these diseases in the Metropolitan area numbered 95, and those in the remainder of the State 169,

the respective corresponding rates per 10,000 living in each division being 1.07 and 1.43. The following table shows the number of deaths and the rates in quinquennial periods since 1884 :—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	1,069	4.04	980	4.51	2,049	4.25
1889-93	1,433	4.65	1,399	5.36	2,832	4.98
1894-98	712	2.10	710	2.39	1,422	2.24
1899-1903	310	0.86	299	0.92	609	0.89
1904-08	367	0.95	338	0.95	705	0.95
1909-13	604	1.37	640	1.59	1,244	1.48
1914-18	659	1.36	682	1.47	1,341	1.41
1919	66	0.65	69	0.70	135	0.67
1920	138	1.31	126	1.25	264	1.28

In former years the rate was high, and showed little improvement until 1893, since when it has been comparatively low. During the decade 1909-1910 it tended upwards, the rate for 1913 being the highest for fourteen years. The experience of the decennial period 1910-1919 shows the disease to be most fatal during the months of April, May, June, and July. Ninety-four per cent. of the persons who died from diphtheria during 1920 were under 10, and about 74 per cent. were under 5 years of age.

#### *Influenza.*

During 1920 there were 259 deaths due to influenza. Prior to 1891 the average annual number of deaths was 44, but during that year 988 deaths occurred. From 1892 to 1917 the average number of deaths was 198, but in 1918 a mild outbreak resulted in 372 deaths. This was completely overshadowed by the disastrous epidemic of 1919, when 6,387 persons died from the disease. A complete examination of the 1919 experience will be found in the 1920 issue of this Year Book.

In the following table the deaths at each outbreak are shown together with those in the intervening periods :—

Period.	Deaths.			Annual Rate per 10,000.
	Male.	Female.	Total.	
1875-1890	388	322	710	0.53
1891	549	439	988	8.65
1892-1917	2,799	2,397	5,196	1.27
1918	218	154	372	1.91
1919	3,851	2,536	6,387	31.93
1920	132	127	259	1.25

#### *Tuberculous Diseases.*

Of the total deaths in New South Wales during the year 1920 the number ascribed to the several classified forms of tuberculous disease was 1,302, or 6.21 per cent. of the actual bill of mortality for the State, and equal to 6.30 per 10,000 living—a rate 5.2 per cent. below the average for the preceding quinquennium.

#### *Tuberculosis of the Lungs.*

Tuberculosis of the lungs, or phthisis, was the cause of 1,118 deaths, or 86 per cent. of the number due to tuberculosis during the year 1920, being sixth in the order of the fatal diseases of the State. The mortality rate per 10,000 living was 5.41, the male rate being 6.62 and the female rate 4.13.

During the decade 1876-85, the rate increased from 9.30 in the second to 11.63 in the last year of the series; but in 1886 a decline, slightly interrupted during individual years, set in, and in 1917 the rate was the lowest on record. In 1919 the rate rose to 6.08, being 3.8 per cent. greater than the rate for the previous quinquennium, which was 5.86. The improvement in the death-rate of the victims of phthisis may be ascribed to increased stringency in the admission of immigrants and visitors; to the application under official supervision of regulations minimising the dangers of phthisis infection attending certain industries; and to the extension of the precautionary and curative methods which have been introduced as results of the modern school of research and experiment.

The following table shows the deaths from tuberculosis of the lungs and the rates for each sex since 1884:—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	3,132	11.83	2,022	9.30	5,154	10.69
1889-93	3,269	10.61	1,925	7.38	5,194	9.13
1894-98	3,191	9.43	1,983	6.68	5,174	8.15
1899-1903	3,322	9.24	2,304	7.08	5,626	8.21
1904-08	2,985	7.72	2,184	6.13	5,169	6.96
1909-13	3,220	7.31	2,286	5.69	5,506	6.54
1914-18	3,373	6.95	2,194	4.72	5,567	5.86
1919	744	7.33	472	4.79	1,216	6.08
1920	700	6.62	418	4.13	1,118	5.41

The decrease in the number of deaths from phthisis and other forms of tuberculosis to a large extent may be ascribed to the effect of the Acts relating to the supervision of dairies (1886), of diseased animals and meat (1892), the maintenance of public health (1896), and the inspection of foods sold for human consumption (1908). The Board of Health was empowered thereby to supervise dairies and dairy products, and to prohibit the sale of tuberculous meat. The powers conferred by the Pure Food Act of 1908 made the finding of a diseased cow in a dairy herd *prima facie* evidence that her milk had been sold for food, and provided for prosecution for selling diseased milk.

The following table shows the deaths and the mortality-rates of phthisis for the Metropolis and the remainder of the State. In the quinquennial period 1894-98 the rate for the former was 47 per cent. higher than that for the later division; since that period the extra-metropolitan rate fluctuated but little until 1920, when the rate dropped about 13 per cent. Owing to the progressive establishment of hospitals for the treatment of consumptive patients, the death-rate for tuberculosis in the Metropolis itself has improved markedly, the decline amounting to 52 per cent. The higher rate for the remainder of the State is due largely to the transfer of phthisis patients from the Metropolis to institutions situated in the country.

Period.	Metropolis.		Remainder of State.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1894-98	2,302	10.26	2,872	6.99
1899-1903	2,490	10.03	3,136	7.18
1904-08	2,184	7.89	2,985	6.40
1909-1913	2,171	6.60	3,335	6.49
1914-18	2,006	5.11	3,561	6.38
1919	467	5.52	749	6.49
1920	453	5.12	665	5.62

Pulmonary tuberculosis is a notifiable disease within the City of Sydney in the area controlled by the Hunter District Water Supply and Sewerage Board, and in the Katoomba Municipality and Blue Mountain Shire. The compulsory observance of health regulations, the ventilation of business and residential buildings and places of amusement, the destruction in recent years of very many unhealthy tenements, the abolition of congested areas, the re-alignment of streets on a more generous scale, and the creation of broad new thoroughfares, have resulted in the disappearance of a number of those urban conditions favourable to the culture of a disease like phthisis.

A comparison of death-rates from phthisis in the Australian States and New Zealand is given below. The rates are stated per 1,000 of the total population, and do not take account either of age or sex, which are material factors.

State.	Death-rate per 1,000 of Total Population.		
	1914-18.	1919.	1920.
New Zealand ... ..	0·54	0·53	·59
Tasmania ... ..	0·50	0·55	·48
Queensland... ..	0·49	0·57	*
New South Wales ... ..	0·59	0·61	·54
Victoria ... ..	0·70	0·71	·66
South Australia ... ..	0·75	0·74	*
Western Australia ... ..	0·73	0·91	·78

\* Not available.

New South Wales stands in a mid-position with regard to the States of the Commonwealth, but compares favorably with the more closely-settled States.

#### *Tuberculosis of Meninges.*

During the year 1920 tuberculosis of meninges caused 68 deaths, which is equal to a rate of 0·33 per 10,000 living. Of the total number, 41 were males; the rates for males and females respectively being 0·39 and 0·27 per 10,000 living of each sex. Of the victims, 50 per cent. were under the age of 5 years and 65 per cent. of the deaths occurred in the Metropolis.

#### *Abdominal Tuberculosis.*

In 1920 the number of deaths recorded as due to abdominal tuberculosis including tabes mesenterica was 45, of which 22 were those of females. The rate shown was 0·21 per 10,000 living. The disease is confined chiefly to children, and of those who died during the year, 8, or 18 per cent., were under 5 years of age. During the last few years the percentage of deaths of children under 5 years of age has decreased considerably, that for 1915 being 37; 1916, 33; 1917, 30; 1918, 23, and 1919, 24. Of the total deaths during 1920, 23 occurred in the Metropolis and 22 in the remainder of the State, the rates per 10,000 living being 0·26 and 0·19 respectively. The death-rate for the whole State of children under 5 years of age was 0·04 per 1,000 living.

#### *Other Tuberculous Diseases.*

To tuberculous diseases other than those above specified were due 71 deaths, equivalent to a rate of 0·34 per 10,000 living.

*Cancer.*

In 1920 the deaths from cancer numbered 1,729, equal to a rate of 8.36 per 10,000 living, and 5.2 per cent. above the average of the quinquennial period preceding. The total included 922 males and 807 females, the rates being 8.72 and 7.98 per 10,000 living of each sex respectively.

Classified according to the parts of the body affected and arranged in order of fatality, cancer caused the following deaths:—Stomach and liver, 603; peritoneum, intestines, and rectum, 250; female genital organs, 182; mouth, 149; breast, 120; skin, 78; and other organs, 347.

The following table shows the deaths and rates per 10,000 living of each sex since 1884:—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	859	3.25	732	3.37	1,591	3.30
1889-93	1,262	4.10	1,038	3.98	2,300	4.04
1894-98	1,719	5.09	1,387	4.68	3,106	4.89
1899-1903	2,295	6.38	1,877	5.77	4,172	6.09
1904-08	2,671	6.91	2,418	6.78	5,089	6.85
1909-13	3,362	7.63	2,860	7.12	6,222	7.39
1914-18	3,886	8.01	3,458	7.44	7,344	7.73
1919	936	9.22	798	8.10	1,734	8.67
1920	922	8.72	807	7.98	1,729	8.36

In New South Wales the male rate is usually the higher, which is contrary to the experience of the United Kingdom.

The ages of the 1,729 persons who died from cancer during 1920 ranged from 10 months to 100 years, but the disease is essentially one of advanced age, 96 per cent. being 35 years and over.

Cancer is probably the most feared of all diseases, inasmuch as no specific remedy is known, and in all countries for which records are kept the death-rate is increasing.

In the following table the rates, based on the whole population, are given for the Australian States and New Zealand. The comparison is uncorrected for age-incidence, and is therefore somewhat crude.

State.	Death-rate per 1,000 of Total Population.		
	1914-18.	1919.	1920.
Western Australia ...	0.65	0.79	0.81
Queensland ...	0.71	0.80	0.80
Tasmania ...	0.74	0.84	0.70
Victoria ...	0.89	0.87	0.86
New South Wales ...	0.77	0.87	0.84
New Zealand ...	0.84	0.91	0.87
South Australia ...	0.86	0.97	0.93

*Diabetes.*

The deaths due to diabetes in 1920 numbered 222, equal to a rate of 1.07 per 10,000 living, which is 2.2 per cent. below the average for the preceding quinquennium. The rate for males was 0.98 and for females 1.17 per 10,000 living of each sex. Most of the deaths occurred after middle life, 165 being those of persons over 45 years of age.

*Meningitis.*

The diseases included under the above heading, encephalitis, simple meningitis, and cerebro-spinal meningitis, caused 141 deaths during 1920, the corresponding rate being 0·68 per 10,000 living. Of this number 88 were males and 53 females, equivalent to rates per 10,000 living of each sex of 0·83 and 0·52 respectively. The deaths in the Metropolis and country were 59 and 82, with corresponding rates, per 10,000 living, of 0·67 and 0·69. The rate for 1920 was 37 per cent. lower than that of the previous five years.

The disease principally affects children; 57, or 41 per cent., of those who died during 1920 were under 5 years of age.

The deaths caused by cerebro-spinal meningitis during 1920 numbered 27.

*Hæmorrhage of the Brain.*

To cerebral hæmorrhage and apoplexy, during the year 1920, were due 697 deaths, of which 389 were those of males and 308 those of females. The rate was 3·37 per 10,000 living, or 3·68 for males and 3·05 for females.

The following table shows the number of deaths and the rates for both sexes from cerebral hæmorrhage and apoplexy in quinquennial periods since 1884. :—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	778	2·97	467	2·15	1,245	2·58
1889-93	796	2·58	618	2·37	1,414	2·48
1894-98	943	2·79	710	2·39	1,653	2·60
1899-1903	1,050	2·92	788	2·42	1,838	2·68
1904-08	1,303	3·31	1,039	2·91	2,342	3·15
1909-13	1,627	3·69	1,439	3·58	3,066	3·64
1914-18	1,693	3·49	1,431	3·08	3,124	3·29
1919	338	3·33	324	3·29	662	3·31
1920	389	3·68	308	3·05	697	3·37

*Convulsions of Children.*

Convulsions of children (under 5 years of age) caused 96 deaths during 1920, or 0·46 per 10,000 living at all ages, which is 36 per cent. below the rate for the previous quinquennium.

The following table shows the number of deaths and the rates for both sexes for every fifth year since 1875 :—

Year.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1875	297	9·34	205	7·69	502	8·59
1880	388	9·75	297	8·98	685	9·40
1885	428	8·38	392	9·41	820	8·84
1890	328	5·47	274	5·45	602	5·46
1895	280	4·19	243	4·17	523	4·18
1900	203	2·84	168	2·63	371	2·74
1905	119	1·57	92	1·32	211	1·45
1910	103	1·23	71	0·91	174	1·08
1915	91	0·93	67	0·74	158	0·84
1920	57	0·54	39	0·39	96	0·46

Being limited to children under 5 years of age, the rates are better stated proportionately to that age-period. On this basis the death-rate in 1920 was 0.41 per 1,000 living as compared with 0.57 of the previous quinquennium. Of the total deaths during 1920, 72 occurred during the first year of life, the equivalent rate being 1.34 per 1,000 births. The deaths of males were more numerous than of the females, the numbers during the first year of life being 46 and 26 respectively, and for all children under 5 years of age 57 males and 39 females. The rate for the Metropolis was considerably lower than that for the remainder of the State. The continuous decline in this cause of infantile mortality is evidence of increasing skill in diagnosing the diseases of children.

### *Insanity.*

Classed as a distinct disease of the nervous system, insanity comprises general paralysis of the insane and other forms of mental alienation.

The number of deaths from this cause was 180 in the year 1920. The death-rate per 10,000 living was 1.09 for males, and 0.64 for females.

Practically all the persons in New South Wales coming within this classification are under treatment in the various mental hospitals. On the 30th June, 1920, there were 7,713 persons under official control and receiving treatment—a proportion per 1,000 of the population of 3.7 or slightly in advance of the average for the preceding quinquennium, which was 3.6.

The percentage of deaths of insane persons in New South Wales is comparatively light. The following table has been computed on the basis of the average number of patients resident in mental hospitals :—

Period.	Males.		Females.		Total.	
	Deaths in Mental Hospitals.	Proportion of Average Number Resident.	Deaths in Mental Hospitals.	Proportion of Average Number Resident.	Deaths in Mental Hospitals.	Proportion of Average Number Resident.
		per cent.		per cent.		per cent.
1894-98	782	6.86	366	5.18	1,148	6.21
1899-1903	1,021	7.77	465	5.54	1,486	6.91
1904-1908	1,280	8.24	613	6.00	1,893	7.35
1909-1913	1,540	8.56	741	6.24	2,281	7.64
1914-1918	1,739	8.59	914	6.70	2,653	7.88
1919	513	12.17	285	9.74	798	11.17
1920	372	8.42	229	6.95	601	7.79

### *Diseases of the Heart.*

Diseases of the heart were the cause of 2,292 deaths during 1920, showing a rate of 11.08 per 10,000 living, practically the same as the average for the preceding five years. Of the total deaths, 1,326 were of males and 966 of females, the corresponding rates per 10,000 living of each sex being 12.55 and 9.55. In the Metropolis the rate was 11.1 per cent. higher than in the remainder of the State.

The ages of persons who died during 1920 ranged up to 104 years, and 86 per cent. of those who succumbed were 45 years of age and over.



The deaths and the death-rates of each sex since 1884 are shown below.

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	2,149	8·12	1,390	6·39	3,539	7·34
1889-93	2,250	7·30	1,357	5·20	3,607	6·34
1894-98	2,434	7·19	1,478	4·98	3,912	6·16
1899-1903	2,917	8·11	1,932	5·94	4,849	7·08
1904-1908	3,791	9·81	2,727	7·65	6,518	8·77
1909-1913	5,054	11·47	3,633	9·04	8,687	10·31
1914-1918	5,950	12·26	4,168	8·97	10,118	10·65
1919	1,263	12·44	1,032	10·48	2,295	11·47
1920	1,326	12·55	966	9·55	2,292	11·08

The classified causes of the total number of deaths include pericarditis, endocarditis, organic diseases of the heart, and angina pectoris. The apparent increase in mortality due to diseases of the heart is probably the result of more specialised biological knowledge, and of the greater attention given to pathological diagnoses. Many deaths formerly recorded as being caused by senile decay would now doubtlessly be assigned to some cardiac trouble.

#### *Bronchitis.*

Bronchitis caused 585 deaths during 1920, equal to a rate of 2·83 per 10,000 living. Of the total, 302 were males and 283 females, the corresponding rates per 10,000 of each sex being 2·86 and 2·80. The rate for the State was 3·5 per cent. lower than that experienced during the previous five years. Deaths in the Metropolis numbered 247, while 338 succumbed in the remainder of the State. The corresponding rates were 2·79 and 2·86 per 10,000 living. Of the total deaths, 229 were caused by acute bronchitis, the remainder being due to the disease in its chronic form. Of those persons who died of acute bronchitis 46 per cent. were under 5 years of age, while 91 per cent. of those who succumbed to chronic bronchitis were 55 years of age and over. Experience shows the disease to be most prevalent during the months of June, July, August, and September.

#### *Pneumonia.*

Pneumonia, including broncho-pneumonia, was the cause of 1,438 deaths during 1920, the equivalent rate per 10,000 living being 6·95, which was 3·5 per cent. above the average for the preceding quinquennium. Of the total 822 were males and 616 females. The male and female rates per 10,000 living were 7·78 and 6·09 respectively. The deaths in the Metropolis numbered 715, and those in the remainder of the State, 723. The rate in the remainder of the State was 32 per cent. higher than that in the Metropolis. An analysis of the deaths according to age shows that pneumonia is most destructive in its attacks on young people and adults in the decline of life.

Of the persons who died from pneumonia during 1920, 34 per cent. were under 5 years of age and 39 per cent. 50 years of age and over. The following table gives deaths and rates, according to sex, since the year 1884 :—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	2,032	7·68	1,301	5·98	3,333	6·91
1889-93	2,158	7·00	1,373	5·26	3,531	6·21
1894-98	2,514	7·43	1,528	5·15	4,042	6·37
1899-1903	3,191	8·87	2,000	6·15	5,191	7·58
1904-1908	2,816	7·28	1,824	5·13	4,640	6·24
1909-1913	2,983	6·77	1,931	4·81	4,914	5·83
1914-1918	3,779	7·79	2,402	5·17	6,181	6·50
1919	778	7·67	628	6·37	1,406	7·03
1920	822	7·78	616	6·09	1,438	6·95

The greatest mortality from pneumonia occurs in the cold weather, and in 1920 there were from this cause 681 deaths, or 47 per cent. of the total number in the four months ranging from June to September.

There has been little reduction in the mortality for some years. There was a drop after 1888, but the rate subsequently increased, with a few fluctuations, to the highest point on record, 9·73 per 10,000 living in 1902. The general rate since the year cited has been much lower, that for 1920 being 29 per cent. below.

#### *Diseases of the Digestive System.*

Diseases of the digestive system accounted for the deaths of 1,416 males and 1,177 females during 1920, the respective rates per 10,000 living being 13·40 and 11·64. The rate corresponding to the total deaths in the State was 12·54 per 10,000 living, and was 12 per cent. above that experienced during the previous five years. Deaths resulting from diseases of the digestive system were caused in the main by diarrhœa and enteritis, with hernia and intestinal obstruction, appendicitis, and cirrhosis of the liver next in order of fatality.

#### *Diarrhœa and Enteritis.*

In 1920 these two diseases were the cause of 1,714 deaths, or 8·29 per 10,000 living, the rates for males being 8·69 and for females 7·87. The general rate was 23 per cent. above the average for the preceding quinquennium. The following table gives the deaths and the rates of males and females since 1884 :—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	3,412	12·89	3,048	14·02	6,460	13·40
1889-93	3,451	11·20	2,851	10·92	6,302	11·07
1894-98	4,042	11·94	3,638	12·26	7,680	12·09
1899-1903	4,422	12·29	3,901	11·99	8,323	12·15
1904-1908	3,714	9·61	3,000	8·41	6,714	9·03
1909-1913	4,257	9·66	3,471	8·64	7,728	9·17
1914-1918	3,622	7·46	2,957	6·36	6,579	6·92
1919	871	8·58	717	7·27	1,588	7·94
1920	919	8·69	795	7·87	1,714	8·29

There was a considerable drop in the rate after 1888, due probably to the beneficial operations of the Dairies Supervision Act. During the next fifteen years there was a gradual increase, followed by a marked improvement in 1904, an improvement which has been consistently maintained until the last two years, when an upward tendency was manifested.

According to the classification, deaths from these diseases are divided into two groups, one including children under 2 years of age, and the other all persons 2 years of age and over. In the first group there were 1,272, or 74 per cent. of the total, and in the second 442.

Of the total deaths from diarrhoea and enteritis 805, or 47 per cent., occurred in the three summer months of January, February, and December; and 475, or 28 per cent., in the autumn months of March, April, and May. As a rule, about 50 per cent. of the deaths occur in the summer.

#### *Appendicitis.*

To this cause 165 deaths were ascribed in 1920, the rate being 0·80 per 10,000 living, which is 5·8 higher than the average of the preceding quinquennium. Appendicitis is much more fatal to males than to females, the rate for the former in 1920 being 1·03, and for the latter 0·55 per 10,000 living.

#### *Cirrhosis of the Liver.*

In 1920 the deaths from cirrhosis of the liver numbered 130, the rate being 0·69 per 10,000 living—5·8 per cent. below the average for the previous quinquennial period. This disease is more prevalent among males than females—the rate for the former in 1920 being 0·86, and for the latter 0·43 per 10,000 living in each sex.

#### *Bright's Disease.*

During 1920 there were 1,247 deaths due to diseases of the genito-urinary system, of which number 840 were caused by Bright's disease, and 85 by acute nephritis. Taking these two diseases together, the rate was 4·92 per 10,000 living, and for males and females 5·49 and 3·78 respectively, the general rate being 8·7 per cent. below that experienced during the previous quinquennium. The deaths due to these diseases in the Metropolis were 501 and in the rest of the State 424, the corresponding rates per 10,000 living being 5·66 and 3·58. Experience shows that the fatality of these diseases increases slightly during the winter months.

The changes in the rates of Bright's disease and of acute nephritis are shown below.

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	626	2·37	386	1·78	1,012	2·10
1889-93	907	2·94	570	2·18	1,477	2·60
1894-98	1,291	3·81	821	2·77	2,112	3·33
1899-1903	1,659	4·61	996	3·06	2,655	3·88
1904-1908	2,056	5·32	1,199	3·36	3,255	4·38
1909-1913	2,649	6·01	1,539	3·83	4,188	4·97
1914-1918	3,080	6·38	1,682	3·62	4,762	5·01
1919	581	5·72	356	3·61	937	4·68
1920	580	5·49	345	3·78	925	4·92

During the whole period covered by the foregoing table the rate both for males and for females has more than doubled. The male rate is about half as high again as the female. Not many persons under 35 die from nephritis, the proportions for 1920 being 11 per cent. for those under 35, and 89 for those at that age and over.

## DEATHS IN CHILDBIRTH.

During 1920 the number of deaths of women resulting from various diseases and casualties incident to childbirth was 331, equivalent to a rate of 6·1 per 1,000 births, or 1 death in every 163 births. Puerperal septicaemia caused 110 deaths, puerperal hæmorrhage 32, accidents of pregnancy 43, albuminuria and eclampsia 66, phlegmasia alba dolens, embolus, sudden death 22, and other casualties of childbirth 58. The experience of the decennial period 1910-19 shows that the average number of fatal cases per 1,000 births for married and for single women are 5·5 and 9·3 respectively, plural births being reckoned as single confinements.

Cause of Death.	Deaths.			Proportion per cent. due to each Cause.		
	Married.	Single.	Total.	Married.	Single.	Total.
Accidents of Pregnancy ... ..	278	26	304	10·52	10·28	10·50
Puerperal Hæmorrhage ... ..	361	12	373	13·66	4·74	12·88
Puerperal Septicæmia ... ..	965	103	1,068	36·51	40·71	36·88
Albuminuria and Eclampsia ... ..	499	41	540	18·88	16·20	18·65
Phlegmasia Alba Dolens, Embolus, Sudden Death.	193	9	202	7·30	3·56	6·97
Other Casualties of Childbirth ... ..	347	62	409	13·13	24·51	14·12
Total ... ..	2,643	253	2,896	100·00	100·00	100·00

More than any other cause of death during childbirth, puerperal septicaemia can be classed as a preventable disease, but nearly 37 per cent. of the deaths are due to this cause. During the last ten years the rates per 1,000 births were as follows :—

Year.	Puerperal Septicæmia.			Total Deaths in Childbirth.		
	Metropolis.	Remainder of State.	State.	Metropolis.	Remainder of State.	State.
1911	2·6	2·0	2·3	6·4	5·5	5·9
1912	2·2	2·3	2·3	5·6	6·1	5·9
1913	3·8	1·9	2·7	7·4	5·6	6·3
1914	2·5	1·5	1·9	6·0	5·2	5·5
1915	2·2	1·8	2·0	5·0	5·2	5·1
1916	2·9	1·7	2·2	6·7	5·1	5·7
1917	1·6	2·1	1·9	6·4	6·1	6·2
1918	2·6	1·4	1·8	6·5	4·5	5·3
1919	2·4	·9	1·4	6·6	4·7	5·4
1920	2·7	1·5	2·0	7·6	5·1	6·1

From the above it will be seen that the death rate is almost invariably higher in the Metropolis than in the remainder of State. This is contrary to expectation, as the Metropolis has greater hospital facilities.

The maternal mortality of New South Wales may be considered high, and shows no signs of declining. There has been a satisfactory reduction in infantile mortality, and a reduction in the death-rate of mothers would tend to lower still further the infantile rate, and insure more babies being born alive.

#### DEATHS FROM VIOLENCE.

Deaths from this cause in 1920 were 1,343, or 6·4 per cent. of the total deaths. This number includes 257 suicides, 937 accidents, 56 homicides, 12 war casualties, and 64 not classed (open verdicts). The rate, 6·49 per 10,000, was 1·2 per cent. lower than the rate for the preceding quinquennium, which was 6·57. In the year 1920 the males thus dying numbered 1,042, or 9·86 per 10,000 living, and the females 301, or 2·98 per 10,000 less than one-third of the male rate.

#### DEATHS FROM SUICIDE.

The number of persons who took their own lives in 1920 was 257, or a rate of 1·37 per 10,000 living, and about 13 per cent. above the average for the preceding quinquennium. The number of male suicides was 204, or a rate of 1·93 per 10,000 living, and of female 53, or a rate of 0·58 per 10,000 living—the male rate thus being three times that of the female.

The number of deaths from suicide and the rates per 10,000 living since 1881 are shown in the following table:—

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	428	1·62	96	0·44	524	1·09
1889-93	519	1·68	110	0·42	629	1·11
1894-98	679	2·01	169	0·57	848	1·34
1899-1903	651	1·81	142	0·44	793	1·16
1904-1908	719	1·86	160	0·49	879	1·18
1909-1913	857	1·95	238	0·59	1,095	1·30
1914-1918	888	1·83	223	0·48	1,111	1·17
1919	168	1·66	53	0·54	221	1·10
1920	204	1·93	53	0·58	257	1·37

The means usually adopted for self-destruction by men are shooting, poisoning, cutting, and hanging. Women, as a general rule, avoid weapons and resort mostly to poison. Of every 100 cases of suicide, 28 are by the agency of poison, 29 by shooting, 16 by cutting, 14 by hanging, and 8 by drowning.

Experience shows that the suicidal tendency is perhaps influenced by the seasons. During the ten years ended 1919 the proportion of male suicides per 1,000 was, during the first quarter of the year, 267, during the last 258,

during the third 245, and during the second 230. January, February, and December, the three hot months of the year, have usually the largest record of suicides.

Female suicides, classified for the same periods, show the highest proportion during the third quarter of the year the figures being 281 per 1,000 for the third quarter, 247 for the first, 230 for the second, and 240 for the fourth.

#### DEATHS FROM ACCIDENT.

During the year 1920 the number of fatal accidents was 937, viz., 720 of males and 204 of females, or equal to rates of 6·81 and 2·38 per 10,000 living of each sex, and the general rate was 4·98 per 10,000 living. Accidental deaths have always been numerically greater in the extra-metropolitan area. Of those registered during 1920, deaths from accident in the metropolis numbered 338, and in the remainder of the State 599. As a general rule, about two-thirds of the accidents occur in the latter division, which contains about 57 per cent. of the total population.

The number of deaths from accident and the rates per 10,000 since 1884 are shown in the table below.

Period.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	3,550	13·41	944	4·34	4,494	9·32
1889-93	3,666	11·90	966	3·70	4,632	8·14
1894-98	3,498	10·33	1,095	3·69	4,593	5·23
1899-1903	3,432	9·54	1,103	3·39	4,535	6·62
1904-1908	3,143	8·13	1,055	2·96	4,198	5·65
1909-1913	3,891	8·83	1,114	2·77	5,005	5·94
1914-18	3,814	7·86	1,075	2·31	4,889	5·15
1919	705	6·93	232	2·35	937	4·68
1920	720	6·81	217	2·38	937	4·98

Although the death-rate from accidents is still high compared with that of more settled countries, it has decreased, the decline for males being more rapid than for females. For the years prior to 1894 the rates were really slightly lower than those shown in the table, because certain causes formerly classed as accidents now fall into different categories.

The experience of the past quinquennium shows that out of every 1,000 accidents 208 are due to vehicles and horses, 140 to drowning, 132 to burns or scalds, 135 to falls, 99 to railways and tramways, 34 to mines and quarries, and 29 to weather agencies, *i.e.*, excessive cold or heat, and lightning. Among males the greatest number of deaths are due to vehicles and horses, and among females to burns and scalds.

#### THE SEASONAL PREVALENCE OF DISEASES.

The following tabulation shows the principal diseases and the seasons of the year during which their effects are most fatal to their victims. The figures are based on the experience of the ten years 1910-19, and show the proportion of deaths per 1,000 from the diseases specified for each of the

twelve months. In order to make the results of the computation comparable adjustments have been made to correct the inequality of the number of days in each month.

Month.	Typhoid Fever.	In- fluenza.	Diph- theria and Croup.	Whoop- ing- Cough.	Phthisis.	Pneu- monia.	Bron- chitis.	Diarrhœa, Enteritis, and Dysentery.	Bright's Disease.
January ...	131	6	70	127	77	54	45	143	75
February ..	159	6	71	72	76	43	40	128	73
March ...	133	19	85	60	74	46	43	107	69
April ...	111	167	115	66	82	62	58	97	77
May ...	87	82	120	54	83	70	78	68	84
June ...	72	230	110	49	86	102	122	43	94
July ...	50	280	106	51	89	131	158	33	98
August ...	35	81	74	69	93	123	135	29	96
September.	38	50	77	85	89	130	120	29	93
October ...	31	43	55	114	86	97	87	50	81
November.	59	19	62	114	84	78	65	118	82
December..	94	17	55	139	81	64	49	155	78
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

The chief features of the above table are exhibited in the contrast between the figures relating to typhoid fever, diarrhœa and enteritis on the one hand, and to pneumonia and bronchitis on the other. In the first group the influence of the hot weather is the controlling factor; in the second, the cold. The warmest months in the year are January, February, and December; the coldest, June, July, and August. Phthisis varies little throughout the year, but the rates show that it is more fatal in the colder months. Bright's disease shows likewise a higher mortality during the cold weather. The seasonal influence on influenza was obscured by the epidemic of 1919.

## EDUCATION.

IN New South Wales the State has established a system of national education which embraces all branches of primary, secondary, and technical education; in addition, there are a number of private educational institutions subject to State inspection, of which the majority are conducted under the auspices of the religious denominations.

The history of the development of the school system of the State and of its passage from private to Government control is interesting.

Prior to the year 1848 the system of education in New South Wales was conducted mainly by the religious denominations, with monetary assistance from the Government. But in that year an undenominational scheme of education, or the National system, as it was called, was introduced and conducted side by side with the denominational system, each group of schools being placed under a separate board. The existence of these two boards continued until 1866, when the Public Schools Act, which, though providing for the continuance of the two classes of schools, placed all schools receiving aid from the State under the control of the Council of Education, a board appointed by the Government. The public schools were administered entirely by this board, and the denominational schools were governed in conjunction with the various religious bodies by which they were founded. From this dual system of control transition was made to the present system by the Public Instruction Act, 1880, which abolished all State aid to denominational education, thus removing the private schools from State supervision. This Act, as amended by the Free Education Act, 1906, and the Public Instruction (Amendment) Acts of 1916 and 1917, is the statutory basis of the present education system in New South Wales.

The State system is administered by a responsible Minister of the Crown, and the executive functions are supervised by the Director of Education, who is Under-Secretary of the Department of Education.

The following table affords a comparison between the number of State schools in operation at the end of 1881, the first full year in which the Department of Education was under immediate ministerial control, and the number open at later periods.

Type of School.	Schools at end of year.					
	1881.	1891.	1901.	1911.	1919.	1920.
High ... ..	...	5	4	8	23	27
Public ... ..	1,007	1,686	1,874	1,915	2,020	2,022
Provisional ... ..	227	320	398	475	457	440
Half-time ... ..	83	280	414	271	122	115
House-to-house and Travelling ...	...	83	17	6	4	4
Correspondence ... ..	...	...	...	...	2	2
Subsidised ... ..	...	...	...	414	455	509
Evening, Primary ... ..	33	13	34	16	...	...
.. Continuation ... ..	...	...	...	18	38	41
Industrial and Reformatory ...	2	3	4	2	3	3
Total ... ..	1,352	2,390	2,745	3,125	3,124	3,163
Number of Schools per 1,000 of population ... ..	1.73	2.06	2.00	1.84	1.53	1.51



The outstanding features of the Public School system are that it is non-sectarian, free, and compulsory ; and each of these principles is enjoined by statute. It is provided by the Act of 1880 that the instruction given in public schools must be secular, but general religious instruction may be given by teachers, and with the consent of parents, by ministers of religion. The Free Education Act, 1906, provided that education in all State primary schools must be free, and fees in secondary schools were abolished by regulation in 1911. The Act of 1880 provided that attendance of children at school must be compulsory between the ages of 6 and 14 years, but the Amending Act of 1916 deferred the attendance of young children for a year, making the compulsory period from 7 to 14 years. The Act gave wider powers to the Minister for ensuring regular attendance, and had the important effect of bringing directly under the supervision of the Department of Education all private schools attended by children of the statutory age. In a large measure private secondary schools are subjected to similar suspension through the medium of public examinations and bursary endowment.

The complete scheme of education, as established, ensures co-ordination between both public and private education systems, and provides a clear and definite avenue from Kindergarten to University. The various stages are marked by certificate examinations, and assistance to obtain higher education is accorded through the bursary system to promising students who lack financial means.

#### THE STATE SCHOOLS.—ANNUAL EXPENDITURE.

The following statement shows the expenditure by Government in each calendar year since 1916 for maintenance, administration, and school premises, on account of primary and secondary public schools and technical schools. In addition to expenditure by the Department of Education the figures include rates paid on behalf of the Department by the Resumed Properties Office, the amount in 1920 being £40,434.

Year.	Primary and Secondary Schools.				Technical Education.	
	Maintenance and Administration.			School Premises.	Maintenance and Administration.	Land and Building, including Repairs.
	Maintenance and Salaries.	Administration and Training.	Total.			
	£	£	£	£	£	£
1916	1,378,619	168,346	1,546,965	313,553	69,934	21,480
1917	1,476,659	180,291	1,656,950	242,383	80,808	20,163
1918	1,545,526	190,649	1,736,175	279,863	85,471	10,651
1919	1,752,042	219,169	1,971,211	299,038	95,055	6,302
1920	2,394,453	273,606	2,668,059	410,847	121,344	2,668

The figures given above represent the annual normal expenditure. To estimate the total cost of State school education during any year would necessitate investigation of the capital value of buildings and equipment, the rate of depreciation to be allowed, etc. At the present time the Department of Education has not the necessary data to give an exact valuation, but in 1914 the estimated value of these properties, including the sites, was £2,400,000.

The relative cost per child enrolled at various periods is shown in the following table:—

Year.	Maintenance and Administration.	School Premises.	Total Expenditure.	Per Child—Mean Quarterly Enrolment.		
				Maintenance and Administration	School Premises.	Total Expenditure.
	£	£	£	£ s. d.	£ s. d.	£ s. d.
1891	578,191	191,374	769,565	3 7 10	1 2 6	4 10 4
1896	594,555	56,752	651,307	3 0 4	0 5 9	3 6 1
901	703,974	57,663	761,637	3 6 2	0 5 5	3 11 7
1906	791,606	89,975	881,581	3 16 2	0 8 8	4 4 10
1911	1,048,583	193,993	1,242,576	4 13 10	0 17 4	5 11 2
1916	1,546,965	313,553	1,860,518	5 13 8	1 3 1	6 16 9
1917	1,656,950	242,383	1,899,333	5 17 2	0 17 2	6 14 4
1918	1,736,175	279,863	2,016,038	5 19 11	0 19 4	6 19 3
1919	1,971,211	299,038	2,270,249	6 16 5	1 0 9	7 17 2
1920	2,668,059	410,847	3,078,906	8 15 4	1 7 0	10 2 4

The following statement shows the distribution of expenditure in connection with primary and secondary schools in the three years 1918 to 1920:—

	1918. £	1919. £	1920. £
School Premises, Buildings, Repairs, Rates ... ..	279,863	299,033	410,847
Maintenance of Schools—			
Teachers' Salaries and Allowances	1,408,984	1,589,248	2,187,734
Travelling Expenses ... ..	14,420	15,298	18,865
Forage Allowances... ..	3,734	4,223	5,720
School Fuel Allowances ... ..	2,396	2,853	3,341
Cleaning Allowances ... ..	45,670	49,070	62,753
Materials ... ..	43,272	44,158	59,881
Miscellaneous Expenses ... ..	27,050	47,192	56,159
Training of Teachers ... ..	47,199	59,634	78,398
Bursary Endowment Board ... ..	35,047	42,608	56,436
Administration—			
General Management ... ..	54,291	61,189	79,001
Inspection ... ..	36,248	37,886	39,897
Chief Medical Officer's Branch ... ..	17,864	17,852	19,874
Total ... ..	£2,016,038	2,270,249	3,078,906

In addition to the amounts expended in connection with State schools large sums are paid from Consolidated Revenue as grants and subsidies to educational and scientific institutions. Thus, in 1920, the University received grants amounting to £82,878, and the expenditure on the Public Library was £22,404, the Australian Museum £13,332, and the National Art Gallery £7,624. The Sydney Grammar School receives an annual endowment of £1,500.

#### KINDERGARTEN.

Kindergarten methods under the Montessori system have been adopted as far as practicable in the infant schools under the Department of Education, and in various parts of Sydney and suburbs Kindergarten classes are conducted for the purpose of bringing young children under refining influences

During the year 1920 classes were in operation in 135 public schools; 17 were separate infant schools, and the remainder were primary schools with Kindergarten departments attached; the number of pupils enrolled for Kindergarten instruction was 7,567, the average attendance being 5,190.

#### *Private Kindergarten Schools.*

Free Kindergarten schools are conducted by the Kindergarten Union of New South Wales, which is assisted by a grant from the Government, amounting in 1920-21 to £1,000. In 1920 there were 10 Free Kindergarten schools with 39 teachers; the number of scholars on the roll during the December quarter was 594, all except two being under 7 years of age. The average daily attendance was 463, and the gross enrolment for the year 729.

At some of the ordinary private schools there are departments for Kindergarten work.

In connection with Kindergarten teaching a private institution supplies training in Froebelian methods, and the free Kindergartens provide observation and practice schools.

#### *Kindergarten Playgrounds.*

In recognition of the fact that normal physical development is fundamental to proper mental training the modern tendency is to defer the age of school attendance and formal instruction, and to bring young children under supervision in playgrounds set apart for their exclusive use. In these areas the children are engaged in organised games, under trained Kindergarten supervisors, and special attention is directed to physical welfare, and to the cultivation of hygienic habits. The organisations engaged in the promotion of the welfare of children are devoting greater attention to the needs of children below the statutory school age—7 years. The Kindergarten Union maintains three Kindergarten playgrounds in the Metropolis; another is attached to the welfare centre, opened recently by the Child Welfare Association; and in Victoria Park, also in the city area, a playground for children is maintained under the supervision of a State Kindergarten teacher. The establishment of additional playgrounds is under consideration.

#### PRIMARY SCHOOLS.

Primary work in its various stages is undertaken in schools classified broadly into three groups—(a) Primary and superior schools in more or less populous centres, (b) schools in isolated and sparsely settled districts, viz., provisional, half-time, house-to-house, and subsidised schools, and (c) correspondence schools, instructing children so isolated as to be beyond the reach of other schools.

The schools are classified according to the average attendance into six classes. The number in each group, at 31st December, 1920, is shown in the following statement; each pair of half-time schools is counted as one, and the separate infants' schools, the subsidised, evening continuation and reformatory schools are excluded.

Class.	Average Attendance.	Schools in Operation, Dec., 1920.	Class.	Average Attendance.	Schools in Operation, Dec., 1920.
I.	Over 1,000	41	V.	41-200	529
II.	751-1,000	29	VI.	40 and under.	1,734
III.	541-750	40			
IV.	201-540	137			

A Public School may be established in any locality where the attendance of 20 children is assured. In the smaller schools the classes are mixed. Schools with an average attendance of 360 pupils are divided into two departments, and those with an attendance exceeding 600 into three departments, viz., boys, girls, and infants.

The infants' course extends over a period of two years. The primary course for older children, completed generally between the ages of 13 and 14 years, includes English, mathematics, geography, elementary science, nature knowledge, civics and morals (history, Scripture, moral duties and citizenship), art and manual work, music, and physical education.

#### *Schools in sparsely settled Districts.*

Provisional schools are maintained where there is an attendance of between 10 and 20 pupils, and in places, such as railway construction camps, where doubt exists as to the permanence of the settlement. Half-time schools are established where a number of children sufficient to maintain an attendance from 10 to 20 pupils can be collected in two groups, not more than 10 miles apart. One teacher divides his time between the two groups, so arranging that home-work and preparatory study shall occupy the time of each pupil in his absence. The course of instruction in provisional and half-time schools follows the course of full-time schools.

Small schools are not established where it is convenient to arrange for the daily conveyance to a central school of the pupils from the surrounding neighbourhood, the cost of conveyance being defrayed by the Department of Education. In 1920 pupils were conveyed to 820 central schools at a cost of £23,302.

There are three travelling schools and one house-to-house school in operation. The travelling schools visit localities where the families are so isolated that two cannot combine readily for the education of the children. The first commenced operations in 1908 when the teacher was provided with a vehicle to carry school requisites, and a tent for use as a schoolroom, in which to teach for a week at a time at each centre in his circuit.

Another type of school for the benefit of families in remote districts is the subsidised school, which may be formed where two or more families combine to engage a teacher. The teacher, if approved by the Department of Education, is paid an annual subsidy at a rate based on the average attendance, viz., in the eastern portion of the State £5 per pupil up to a maximum of £70, and in the western division £6 per pupil up to £80. The course is as far as practicable the same as in primary schools, and the subsidised schools are subject to inspection by the State school inspectors. A subsidised school may be established by a single family with at least 4 children of school age. As an alternative to subsidising a teacher, payments may be made under certain conditions as an aid towards boarding children in a township for the purpose of attending a public school.

#### *Correspondence Schools.*

At the beginning of 1916, further efforts were made, by means of teaching by correspondence, to extend educational facilities to children in remote localities. The experiment was commenced with three pupils, and met with such success that operations have been extended considerably. The course of instruction covers the ordinary primary course up to the standard of the Qualifying Certificate examination, and some of the pupils have passed this test with credit. A pupil is not admitted before the age of 7 years, and the young children are taught by kindergarden teachers, illustration being employed largely with satisfactory results. There are two correspondence

schools, with an enrolment of 700 pupils, and fifteen teachers at the Head Office in Sydney are engaged in teaching them.

Valuable experience in teaching methods and in child psychology has been gained through the correspondence system which brings the teacher into direct relationship with each of his pupils.

#### SECONDARY EDUCATION IN STATE SCHOOLS.

On completion of the primary stage, in which the course is fairly uniform in every class of State school, facilities are provided for a variety of courses, so that pupils may select that which gives the most suitable training for the type of occupation which he intends to follow on leaving school. Secondary courses are provided in Superior or Continuation schools, and in District and High schools. During the last ten years there has been a notable expansion in the State system of secondary education, which, up to that time, had been left, for the most part, to private enterprise.

The following statement shows the number of pupils receiving education beyond the primary stage in the State schools in 1920, in comparison with the number in 1913, the first year for which particulars are available :—

Schools.	1913.			1920.		
	Number of Schools.	Gross Enrolment.	Average Daily Attendance.	Number of Schools.	Gross Enrolment.	Average Daily Attendance.
High ... ..	15	3,580	2,832	27	8,194	6,656
Intermediate High ... ..	5	1,134	783	23	4,442	3,229
District ... ..	22	1,678	1,092	11	794	526
Superior Public (Day Continuation)—						
Commercial ... ..	32	1,724	883	17	1,580	1,265
Junior Technical ... ..	20	804	416	24	2,865	1,725
Domestic ... ..	52	1,601	778	47	4,920	2,829
Total... ..	146	10,521	6,789	149	22,795	16,230

In addition to the above Superior Public (Day Continuation) schools, there are other Public Schools in districts where secondary schools are not easily accessible, in which an extended course of study in certain subjects is followed by pupils who have completed the primary course, but statistics of enrolment or of attendance are not available. So far as possible a clear distinction is maintained between primary and secondary schools.

#### *Superior and Day Continuation Schools.*

Any Public School may be declared a Superior School if there is in one department a minimum attendance of 20 pupils who, having completed the primary course, are desirous of continuing their education.

Since 1912 the Superior Public Schools have been converted into Day Continuation Schools to provide special instruction to fit pupils for industrial or commercial pursuits. The schools are organised upon a vocational basis as (1) Junior Technical for boys, which supply preliminary groundwork for industrial careers, the course of study being fundamental to that of the Trades Schools of the Technical Education system ; (2) Commercial for boys and girls, where the curriculum includes shorthand, book-keeping, business principles, etc. ; (3) Domestic for girls, the special subjects being those relating to home management. The course in the Commercial Schools extends over a period of three years, and in the other Day Continuation Schools two years. At the conclusion of the course, an examination is held, and the successful candidates are awarded the Superior Public School certificate which is equal to the intermediate certificate of the High Schools.

*Evening Continuation Schools.*

Evening Continuation Schools have been established for the benefit of those who leave school at the termination of the primary course to engage in some form of work. They are organised on the same lines as the Day Continuation Schools; the courses, which extend over a period of two years, are similar, though they are necessarily modified for pupils who, after work during the day, attend the classes for only a few hours per week. An Evening Continuation School may be established in any centre where the number of students who will guarantee to attend for two years is sufficient. A fee of 6d. per week is charged, but it is refunded at the end of each year to the students whose conduct and attendance have been satisfactory. The average age of the pupils attending the Evening Continuation Schools is 18 years.

The following is the record of the Evening Continuation Schools for the years 1919 and 1920:—

Classification.	1919.			1920.		
	Number of Schools.	Average Weekly Enrolment.	Average Weekly Attendance.	Number of Schools.	Average Weekly Enrolment.	Average Weekly Attendance.
Junior Technical (Boys)...	14	655	456	16	947	734
Commercial (Boys) ... ..	16	1,155	810	17	1,340	1,046
Preparatory ... ..	1	11	7	...	...	...
Domestic (Girls) ... ..	8	205	127	8	257	171
Total ... ..	39	2,026	1,400	41	2,554	1,951

In connection with the Continuation School system the question of compulsory attendance has been the subject of much discussion.

*High Schools.*

The High Schools provide a course of secondary education, covering a period of five years, for pupils who have completed the primary course. In the majority of high schools the course is of a general character, but in two the course is specialised to a certain extent, viz., the Sydney Technical High School where preparation is given for occupations requiring skill, such as engineering and architecture, and the Agricultural High School at Hurlstone Park, which accommodates students for rural pursuits and for admission to the Hawkesbury Agricultural College.

The Intermediate High Schools provide a course extending over a period of three years for pupils who do not intend to continue their studies throughout the full course of five years. At the High and Intermediate High Schools materials and apparatus are supplied free and no fees are charged.

To gain admission to the secondary courses, pupils must pass the Qualifying Certificate examination; and they must gain the Intermediate Certificate at the end of the third year's course in the high schools before commencing the work of the fourth year. The Leaving Certificate is awarded upon completion of the full course of five years.

In 1920 there were 27 State High Schools, of which 18 were in the country centres, and 23 Intermediate High Schools, including 12 in the country.

The following particulars relate to High Schools and Intermediate High Schools maintained by the State :—

Year.	High Schools.	Inter- mediate Schools.	Teachers.			Pupils.			Holders of—		Cost per head of enrolment.
						Enrolment.		Average Attendance.			
			M.	F.	Total.	Total.	Average Q'terly.		Bur- saries.	Scholar- ships.	
1901	4	...	16	11	27	676	526	489	†	†	£ s. d. 9 15 2
1911	8	...	59	38	97	2,293	1,864	1,786	201	250	10 6 10
1916	19	3	195	146	341	5,888	5,330	4,780	748	1,165	21 8 0
1917	21	3	172	170	342	6,780	6,236	5,555	861	693	14 12 11
1918	22	4	214	195	409	7,454	6,793	6,047	929	330	14 8 2
1919	23	4	229	215	444	7,750	6,784	5,949	990	*	16 16 8
1920	27	23	310	274	584	12,636	9,575	8,805	1,064	*	18 2 0

\* Additional scholarships were not awarded after 1916, in which year the free supply of text-books and materials commenced. † Not available.

Since 1911 the number of High Schools has increased from 8 to 50 (including 23 Intermediate); the average quarterly enrolment has risen from 1,786 to 8,805; the number of pupils holding bursaries from 201 to 1,064, and the cost per scholar from £10 6s. 10d. to £18 2s.

This rapid expansion in secondary schools affords evidence of a widespread desire for education among the people, and the anxiety to take advantage of the improved facilities has imposed on the Department the necessity of excluding by means of competitive examination for admission those less qualified to benefit from a course of secondary education. A corresponding growth in the number of University undergraduates is evident after 1916, in which year students educated entirely under the new system introduced in 1911 were first able to qualify educationally for matriculation.

Arrangements are being made for the establishment of hostels in connection with the High Schools in country districts; five hostels are already open and sites have been purchased for two others.

#### *District Schools.*

In the larger country centres where the enrolment of secondary pupils is not sufficient to warrant the establishment of separate High Schools, "District" Schools have been established as "tops" to the local Primary Schools. These schools have special staffs, and the higher classes follow the secondary course of instruction as prescribed for High Schools up to the end of the third year. At the close of 1920, eleven of these schools were in operation, the average weekly enrolment of secondary pupils was 337 boys and 417 girls, and the average attendance 247 boys and 279 girls.

Several of these schools afford instruction over the whole secondary syllabus, and from time to time the larger District Schools are established as High Schools.

#### PRIVATE SCHOOLS.

Private schools have existed in New South Wales since the foundation of the colony, and their connection with the general education system of the community has been outlined on a previous page. From their former independent position they have recently become subject to a large extent to the supervision of the Department of Education, so that educational standards are now practically uniform throughout the State; but no private school, except the Sydney Grammar School, is subsidised by the Government.

Approximately 90 per cent. of the private secondary schools have become subject to State inspection by virtue of the Bursary Endowment Act, 1912. This inspection has regard to the premises, organisation, equipment,

instruction, teaching-staff, and general conduct of the schools; and only in cases where a favourable report is made in these particulars can a school be registered under the Act, and thereby allowed to educate State bursars or candidates for State University Bursaries. In 1920, there were 145 private secondary schools registered, while successful candidates at the secondary school examinations came from 146 private schools. The number of pupils undergoing secondary instruction in private schools was estimated to be about 13,800 in September, 1920.

Up to the end of 1916 the Department of Education did not exercise supervision over private primary schools, but in order to comply with the compulsory attendance clauses of the Public Instruction (Amendment) Act, 1916, children between the ages of 7 and 14 years are obliged to attend schools certified as efficient by the Minister for Public Instruction. Applications for registration of schools (in accordance with the Act) are made to the Minister, and provisional registration is granted pending inspection by Government officers. Appeals against the refusal or cancellation of certificates may be made to the Bursary Endowment Board. The Act authorises inspection, both as regards instruction and school premises, and proprietors may be compelled to bring the condition of their schools up to the standard of State schools similarly situated and circumstanced. Teachers and proprietors of certified schools are required to furnish returns to the Minister. An immediate effect of the Act was that a large number of private schools were closed.

The system of certificate examinations for pupils of State and private schools instituted by the Department of Education in 1911 tends to establish co-ordination between the curricula of both classes of schools.

The fees vary in accordance with the type of school, many of the secondary schools being residential. In the denominational primary schools the payment of fees is to a large extent voluntary. Some scholarships and bursaries have been provided by private subscription for the assistance of deserving students.

A comparative statement relating to the private schools is shown below. In December quarter, 1920, of the total number of children attending school 19.9 per cent. were enrolled at private institutions. Sufficient data are not available to permit the classification of these schools according to the standard of instruction supplied:—

Classification.	1910.				1920.			
	Schools.	Teachers.	Enrolment December Quarter.	Average Daily At- tendance.	Schools.	Teachers.	Enrolment December Quarter.	Average Daily At- tendance.
Undenominational ...	312	1,212	10,087	8,517	148	744	7,541	6,384
Roman Catholic ...	394	1,985	44,249	36,622	455	2,471	60,196	47,557
Church of England ...	57	302	3,500	2,867	57	442	4,749	3,918
Presbyterian ...	4	44	288	279	3	71	692	652
Methodist ...	2	37	289	260	3	51	591	540
Lutheran ...	1	2	64	54	3	3	71	60
Seventh Day Adventist	2	14	220	202	4	9	215	137
Salvation Army ...	...	...	...	...	2	4	165	141
Hebrew ...	2	6	550	550	...	...	...	...
Theosophical ...	...	...	...	...	1	15	119	106
Total ...	774	3,602	59,247	49,351	679	3,810	74,339	59,495

Included in the number of teachers, as shown in the table, are those who visit the schools to give tuition in special subjects only, the figures for 1920 being 2,791 permanently attached to the teaching staffs of the schools, and 1,019 visiting teachers, as compared with 2,616 staff teachers and 986 visiting teachers in 1910.

The number of scholars attending private schools has increased since 1910, despite a decline in undenominational schools, but the increase has not



been at so fast a rate as in public schools. More than 80 per cent. of the pupils at private schools were enrolled at Roman Catholic establishments, which, since 1910, have grown at a faster rate than the population.

#### SCHOOLS AND TEACHING STAFFS.

The following table shows the total number of public and private schools in operation at the end of 1901, 1911, and of each of the past five years, and the aggregate teaching staff in each group. The figures in this table, and in the subsequent tables relating to public and private schools, are exclusive of the Technical Colleges and Trade Schools, Free Kindergarten and other schools maintained by charitable organisations, shorthand and business colleges, etc.

Year.	Schools.			Teaching Staffs.						
	Public.	Private.	Total.	In Public Schools.			In Private Schools.			Grand Total.
				Men.	Women.	Total.	Men.	Women.	Total.	
1901	2,745	890	3,635	2,857	2,355	5,212	632	2,776	3,378	8,590
1911	3,125	757	3,882	3,399	3,203	6,517	704	2,981	3,685	10,202
1916	3,188	702	3,890	3,742	4,627	8,369	697	3,009	3,706	12,075
1917	3,221	660	3,881	3,698	5,061	8,759	681	3,054	3,735	12,494
1918	3,152	699	3,851	3,677	5,345	9,022	795	3,040	3,835	12,857
1919	3,124	678	3,802	3,636	5,336	9,002	750	3,094	3,844	12,846
1920	3,163	679	3,842	3,707	5,407	9,204	749	3,061	3,810	13,014

In 1911 there was, on the average, one school to 79 children requiring education; and in 1920 one to 100 children.

The number of teachers per school was greater in private than in public schools, but the staffs of the private schools include a number of visiting teachers who teach special subjects only, and do not devote their whole time to one school. Moreover, there is a large number of public schools in rural centres where the attendance is less than 40, and where, consequently, only one teacher is employed.

In the State schools the men employed as teachers outnumbered the women until 1912, and the proportion of men in 1920 was only 40 per cent. In the private schools the proportion of men teachers has been small always; and, though it shows a slight tendency to increase, the men constituted only 19 per cent. of the teaching staff in 1920.

#### ENROLMENT.

A comparative review of the enrolment of children at public and private schools is restricted to the last quarter in each year, as the figures formerly collected in regard to private schools relate only to that period. The following statement shows the recorded enrolment during the December quarter:—

Year.	Enrolment (December Quarter).			Proportion of Total Children Enrolled.	
	In Public Schools.	In Private Schools.	Total.	In Public Schools.	In Private Schools.
				per cent.	per cent.
1901	210,588	60,837	271,425	77.6	22.4
1911	221,810	61,550	283,360	78.3	21.7
1916	264,713	68,300	333,013	79.5	20.5
1917	277,874	69,126	347,000	80.1	19.9
1918	280,236	74,192	354,428	79.1	20.9
1919	283,931	74,936	358,867	79.4	20.6
1920	299,691	74,339	374,030	80.1	19.9

Since 1901 the enrolment in public schools has increased by 42 per cent. while in the private schools it has risen by only 22 per cent., so that the proportion of children in public schools has advanced from 77.6 per cent. to 80.1 per cent. In the public schools there are more boys than girls, the proportions being boys 52 per cent., and girls 48 per cent.; in the private schools, girls are in the majority, representing 54 per cent. of the enrolment:—

Year.	Public Schools.		Private Schools.		Total Enrolment.		
	Boys.	Girls.	Boy	Girls.	Boys.	Girls.	Total.
1901	110,971	99,617	27,163	33,674	138,134	133,291	271,425
1911	116,317	105,493	26,962	34,588	143,279	140,081	283,360
1916	138,099	126,614	30,193	38,167	168,292	164,721	333,013
1917	144,808	133,066	30,427	38,699	175,235	171,765	347,000
1918	146,136	134,100	33,829	40,363	179,965	174,463	354,428
1919	150,465	138,466	34,267	40,669	184,732	179,135	363,867
1920	156,066	143,625	34,254	40,085	190,320	183,710	374,030

### *Children receiving Instruction.*

Sufficient data are not available to indicate accurately the proportion of children who actually come within reach of the education system, but from such information as is available it would appear that a very high proportion of the children in the State receive instruction in schools.

Of the children not enrolled at schools in any particular year the majority are probably receiving instruction at home, are exempt from attendance on reaching the age of thirteen years, are inaccessible to schools, or are mentally or physically deficient.

A somewhat exacting test may be imposed by considering the average number of children actually present at school on each day, in relation to the average number of children requiring education during the year. These particulars are shown below for each year since 1917, when the Public Instruction Amendment Act was brought into operation with the object of ensuring the regular attendance at school of children between the ages of 7 and 14 years.

Year.	Estimated Number of Children of School Age during the Year *	Children of other Ages Enrolled.	Number of Children requiring Education.	Average Daily Attendance in Schools.	Proportional Attendance.
					per cent.
1917	264,500	82,377	346,877	277,952	80.1
1918	273,700	82,872	356,572	285,776	80.1
1919	280,200	85,593	365,793	266,810	72.9
1920	294,000	87,027	381,027	294,152	77.2

\* School age being 7 to 14 years.

The results of this test do not reveal an entirely satisfactory condition of affairs, since it appears that a child attends on the average less than 80 per cent. of the time, or four days in every school-week. During the three years 1914-1916, when the age of compulsory attendance was from 6 to 14 years, the proportional attendance was approximately 75 per cent.

The regularity of attendance of children enrolled at schools is a very important factor in determining the merits of an educational system, inasmuch as marked irregularity in this respect is fatal to proper education. A correct

measure of the degree of constancy of attendance at schools is obtained by considering the average number of pupils present each day in relation to the average number enrolled each week. The following comparison is made on this principle:—

Year.	Public Schools.			Private Schools.		
	Average Weekly Enrolment.	Average Daily Attendance.	Ratio of Attendance to Enrolment.	Average Weekly Enrolment.	Average Daily Attendance.	Ratio of Attendance to Enrolment.
1911	203,335	160,776	per cent. 79·0	*	52,122	per cent. *
1916	246,572	200,635	81·3	*	56,880	*
1917	258,713	221,940	85·8	*	56,012	*
1918	265,756	225,790	84·9	*	59,986	*
1919	261,778	212,873	81·3	64,851	53,937	83·2
1920	279,944	234,657	83·8	72,100	59,495	82·5

\* Not available.

The marked improvement in attendance during 1917 is due to the operation of the amended law relating to school attendance, and the decline during 1919 was an effect of the epidemic of influenza in that year.

The attendance of children at school is affected adversely by the considerable amount of infectious and contagious diseases among children, and—particularly in country districts where transport facilities are lacking—by inclement weather.

#### AGE DISTRIBUTION OF PUPILS.

The following table shows the age distribution of pupils enrolled at schools during each year since the age of compulsory attendance was altered. The figures represent the December quarter enrolment, and are exclusive of Evening Continuation Schools:—

Year.	Public Schools.				Private Schools.			
	Under 7 years.	7 years and under 14.	14 years and over.	Total.	Under 7 years.	7 years and under 14.	14 years and over.	Total.
1917	37,218	218,995	21,651	277,874	13,755	45,628	9,743	69,126
1918	35,641	222,370	22,225	280,236	13,182	49,186	11,824	74,192
1919	37,935	227,535	23,461	288,931	13,195	50,739	11,002	74,936
1920	39,319	235,611	24,761	299,691	12,137	51,892	10,810	74,839

In 1920 there were enrolled 51,456 children below the statutory school age—26,553 boys and 24,903 girls; and 35,571 pupils were over 14 years of age—17,172 boys and 18,399 girls.

More detailed information as to the ages of children attending public schools may be obtained from a table published annually in the report of the Department of Education. That table shows also the ages of children in the various school classes, and, considered in conjunction with the primary school syllabus, affords an excellent means of gauging the educational progress of school children as a whole.

## RELIGIONS.

A comparative view of the aggregate enrolment in all schools (public and private) during the December quarter of various years is given below, and the figures, being on the same planes of comparison for each year, may be accepted as illustrative of the progression of each type of school during the period:—

Year.	Public Schools— Denomination of Children.					Private Schools— Denomination of Schools.			Total Enrolment all Schools.
	Church of England.	Roman Catholic.	Presby- terian.	Methodist.	Other.	Church of England.	Roman Catholic.	Other.	
1901	109,876	31,054	23,511	24,971	21,176	3,966	41,486	15,385	271,425
1911	118,794	31,044	26,347	30,595	15,030	3,297	46,097	12,156	283,360
1916	143,757	33,648	31,478	37,883	17,947	3,638	54,124	10,538	333,013
1917	151,866	34,438	33,091	39,795	18,684	3,841	55,337	9,948	347,000
1918	153,993	33,274	33,428	40,324	19,217	4,320	59,136	10,736	354,428
1919	159,876	33,607	34,165	41,514	19,769	4,715	60,271	9,950	363,867
1920	166,733	34,500	35,491	42,776	20,191	4,749	60,196	9,394	374,030

## PER CENT. OF TOTAL ENROLMENT.

1901	40.5	11.4	8.7	9.2	7.8	1.5	15.3	5.6	100
1911	41.9	10.9	9.3	10.8	5.3	1.2	16.3	4.3	100
1916	43.2	10.1	9.4	11.4	5.4	1.1	16.2	3.2	100
1917	43.8	9.9	9.5	11.5	5.4	1.1	15.9	2.9	100
1918	43.4	9.4	9.5	11.4	5.4	1.2	16.7	3.0	100
1919	43.9	9.3	9.4	11.4	5.4	1.3	16.6	2.7	100
1920	44.6	9.2	9.5	11.4	5.4	1.3	16.1	2.5	100

It will be noticed that in the public school figures the column headings indicate the denomination of the children, and in the private school figures the denomination of the schools. In the former case the denomination of the child is ascertained, but not in the latter; and the pupil, although attending a school of stated denomination, is not necessarily of that denomination.

*Religious Instruction in State Schools.*

The Public Instruction Act, 1880, provides that religious instruction may be given in State schools by visiting ministers and teachers of religious bodies for a maximum period of one hour in each school day, and the following table indicates the number of lessons in special religious instruction given in primary schools during the past five years:—

Denomination.	Number of Lessons.				
	1916.	1917.	1918.	1919.	1920.
Church of England ... ..	33,600	34,349	35,098	28,444	31,363
Roman Catholic ... ..	1,460	1,584	1,370	1,167	1,477
Presbyterian ... ..	7,517	8,411	9,122	7,626	9,005
Methodist ... ..	12,591	13,368	13,865	11,472	13,594
Other Denominations ... ..	6,908	7,334	8,260	5,893	7,518
Total ... ..	62,076	65,046	67,715	54,602	65,957

## TECHNICAL EDUCATION.

The first class for Technical Education in New South Wales was established by the Sydney Mechanics' School of Arts in 1865. The scheme passed under Government control in 1883, and the Sydney Technical College was opened in 1892.

Technical Education is under the direct control of the Department of Education, and is administered by a superintendent, with financial and general procedure independent of other branches of the education system. The courses of instruction are co-ordinated, however, with those of the ordinary schools, viz., technical classes in Public Primary Schools, the Junior Technical Continuation Schools, and the Technical High School.

The system of Technical Education is administered from the Central Technical College, Sydney; branch Technical Colleges have been established at Newcastle and Broken Hill; and Trade Schools have been instituted in seventeen country and suburban centres. A large building at Darlinghurst, Sydney, is being remodelled in order to provide for an extension of the work of the Central College.

Specialised instruction in the practice of a wide range of callings is provided for the apprentice, improver, and journeyman, while higher courses, embracing the technology of the various trades and technical professions, may be followed by more advanced students.

Intending students are required to furnish evidence that they possess sufficient preparatory knowledge to take profitable advantage of the training, and a student is not admitted to a course unless actually engaged in the specific trade to which the course relates. Special provision is made for the admission of journeymen, without preliminary test, to any part of the courses relating to their trades; and young students are admitted if they furnish a guarantee to become apprenticed before reaching the limit of the age of apprenticeship.

A noteworthy feature of the system is the existence of advisory committees in connection with each course of instruction. These committees are composed of representatives of employers and employees, who visit the classes regularly and discuss with the Superintendent and heads of departments matters relating to the maintenance of standards of efficiency in equipment and teaching.

The lower Trade Courses cover a period of three years in the Trade Schools, and the Higher Courses of two years are given in the Technical Colleges. The subjects are grouped to form trade classes, instruction being given in all branches of mechanical and electrical engineering, building, sanitation, and artistic and manufacturing trades.

Instruction is given also in women's handicrafts (which include domestic science, cookery and laundry work), and in window-dressing, and tailor's cutting, but these subjects are not included in the trade or diploma classes. Special courses of instruction in Sanitary Science, Draining and Water Fitting, Meat Inspection, and Printing (composing) are conducted by means of correspondence.

The satisfactory completion of any course of instruction is marked by the award of certain certificates, viz., the Certificate of Trade Competency in trade courses and the College Diploma in the higher courses. These certificates are recognised by employers.

Fees are payable for most of the technical classes, the maximum for juniors being 10/- per term, and for seniors, 20/-

The following table shows the number of classes and teachers and the enrolments at the Technical College and Trades Schools during the last five years.

Year.	Classes.	Lecturers and Teachers.	Total Enrolment.*	Individual Students.	Average Weekly Attendance.	Fees Received.
1916	529	321	14,188	7,720	10,077	£ 9,968
1917	544	343	15,065	8,401	11,072	9,354
1918	572	369	15,986	8,717	12,156	9,422
1919	557	379	14,580	7,827	10,949	8,788
1920	638	406	18,119	9,258	13,808	12,701

\* Includes students who have joined more than one class.

The enlistment of students for military service affected the attendance during the war, while in 1919 the abnormal conditions accompanying an outbreak of influenza adversely affected both enrolment and attendance. During 1920 there was a marked expansion in the technical education as regards both classes and attendance.

#### THE UNIVERSITY OF SYDNEY.

An Act to incorporate and endow the University of Sydney was passed by the Parliament of New South Wales on 1st October, 1850.

By the Act of foundation the University is required to be undenominational, religious tests for admission to any privilege being prohibited expressly; degrees in Theology or Divinity are not conferable. Authority was given to examine, and to grant degrees in Law and Medicine as well as in Arts. In 1884 the benefits and advantages of the University in all respects were extended to women equally with men.

In 1900 the various enactments relating to the University were consolidated by means of the University and University Colleges Act; of the Amending Acts passed subsequently the most important, passed in 1912, made radical alterations in the constitution of the Senate.

The Senate of the University consists of 24 members, viz. :—

- 4 Fellows appointed by the Governor.
- 1 Fellow elected by the Legislative Council.
- 1 " " " " Assembly.
- 5 Fellows representing the Teaching Staff of the University, *i.e.*, one elected by the Professorial Board and one each by the four Faculties.
- 10 Fellows elected by Graduates.
- 3 " " the aforesaid Fellows.

The fellows representing the teaching staff are elected for a period of two years, otherwise the term of office of a Fellow is five years.

The Senate has power to appoint all professors and other officers, and has the management and superintendence over the affairs of the University, with power to make by-laws, subject to the approval of the Governor, relating to discipline, curriculum, and other matters.

A State endowment of £30,000 per annum is payable to the University, with the proviso that when a census is taken it will be increased at the rate of £1 for each 15 persons between ages 17–20, added to the population of the State; an additional endowment of £2,000 per annum has been granted for the maintenance of a Chair of Architecture. In addition, by the University (Building) Act, 1919, a sum of £300,000 was appropriated for

buildings within the University, to be paid out of Consolidated Revenue at the rate of £50,000 per annum, commencing with the financial year 1920-21.

Under the University Amendment (Exhibitioners' Fees) Act, 1918, the Senate has been authorised to defray from the statutory endowment the fees at Universities and educational institutions abroad, for or on behalf of any person holding a public exhibition at the University of Sydney who has been engaged on war service.

Colleges of residence for the association of students in the cultivation of secular knowledge may be established within the University; a Government grant up to a maximum of £20,000 may be paid in aid of the building fund of each college, also an annual endowment of £500 for the principal's salary. Four colleges in connection with religious denominations have been established adjacent to the University, namely, St. Paul's (Church of England), St. John's (Roman Catholic), St. Andrew's (Presbyterian), and Wesley (Methodist). A college of residence for women was established in 1892 on a strictly uddenominational basis, and a teachers' college has been established in connection with the Department of Education. The colleges provide tutorial assistance to students in preparing for the University lectures and examinations.

Within the University there are ten Faculties, viz, Arts, Law, Medicine, Science, Engineering, Dentistry, Veterinary Science, Agriculture, Architecture, and Economics; and a School of Domestic Science. A Dean for each Faculty is appointed for a period of two years. The Professors, with the Chancellor and Vice-Chancellor, form the Professorial Board, which superintends matters relating to study and discipline.

The University buildings consist of the main building, containing the great hall, lecture rooms and offices, all built of Pyrmont sandstone; the Medical School, which is in the same style; the Fisher Library, adjacent to the main building, and designed to form part of the main quadrangle, is of modern design, with bookstacks of steel and glass for 200,000 volumes, and with ample reading-room accommodation for students.

Separate buildings for the Departments of Chemistry, Physics, Geology, Biology, Botany, Veterinary Science, Agricultural Science, and the Macleay Museum are distributed over the grounds, which, including lands vested by the Senate in the Affiliated Colleges, etc., cover an area of 126 acres. The Peter Nicol Russell School of Engineering has a separate building, provided by the State at a cost of £25,000. A building for the Teachers' College is partially completed. The Law School is conducted in the city in order to meet the convenience of students.

Many benefactions have been bestowed on the University by private persons. These endowments include the Challis Fund, of which the cash balance at 31st December, 1920, amounted to £323,298; the P. N. Russell Funds, £100,386; and the Fisher Estate, £44,121. By the will of the late Sir Samuel McCaughey, whose death occurred in 1919, the University received further substantial endowment; particulars are not yet available, but it is estimated that the University will benefit to the extent of about £15,000 per annum; the income will be devoted chiefly to the maintenance of professorships and lectureships, and to the establishment of a Scientific Research Fund. Some prizes have been exhausted by award, but by careful investment, increases in value, unawarded scholarships, and other causes, the private foundations showed at 31st December, 1920, credit balances to the extent of £590,879.

*University Finances.*

The following statement shows the amounts derived by the University from each of the principal sources of revenue, and the total expenditure, during each of the last five years. Under the items are included sums received for special expenditure and amounts from benefactors to establish new benefactions:—

Year.	Receipts.					Disbursements.	Private Endowment Funds Credit Balance at end of Year.
	Government Aid.	Fees.	Challis Fund and other Private Foundations.	Other Sources.	Total.		
	£	£	£	£	£	£	£
1916	54,592	13,707	29,961	1,380	99,640	98,233	572,882
1917	61,654	13,489	27,409	1,090	103,642	98,944	579,521
1918	66,232	15,798	32,439	1,380	115,849	116,347	589,369
1919	67,203	21,353	35,685	1,428	125,669	121,008	597,333
1920	83,478	33,324	48,371	1,957	167,130	160,203	600,339

\* Includes Retiring Allowances Fund.

During the year 1920 the University received from the Government of New South Wales a statutory endowment of £32,000, and a sum of £25,000 for building extensions under the University (Building) Act of 1919. The total amount of Government aid received during the year was £83,478, including £600 from the Federal Government in connection with Oriental studies. The State aid included the following sums for the services mentioned:—

Scientific Apparatus...	£ 1,875	Pharmacology ...	£ 250
Evening Lectures ...	1,725	Chair of Chemistry ...	1,875
Towards Reduction of Lecture Fees	1,875	„ Mechanical Engineering ...	375
Extensions of Existing Departments	1,125	Tutorial Classes and University Extension ...	4,403
Chairs of Agriculture and Veterinary Science ...	4,500	Instruction in Modern Languages...	750
Chair of Botany ...	1,500	Science Research Scholarships ...	750
„ Economics and Commerce	2,250	Library ...	375
„ Astronomy ...	150	Retiring Allowances...	600

The principal item of disbursements in each year is for salaries. In 1919 and 1920 the total expenditure was distributed as follows:—

Classification.	Amount.		Percentage of Total.	
	1919.	1920.	1919.	1920.
	£	£	per cent.	per cent.
Salaries ...	76,647	100,208	63·0	62·6
Maintenance, Apparatus, etc. ...	26,716	37,815	22·0	23·6
Buildings and Grounds ...	2,996	1,744	2·5	1·1
Scholarships and Bursaries ...	6,352	6,873	5·2	4·3
Other ...	8,897	13,563	7·3	8·4
Total ...	121,608	160,203	100·0	100·0

*Lectures and Lectureships.*

Non-matriculated students are admitted to lectures and to laboratory practice, but are not eligible for degrees. On the satisfactory completion of any course, however, they may be awarded a certificate to that effect. Lectures are given during the daytime in all subjects necessary for degrees and diplomas, and evening lectures are provided in the Faculties of Arts and Economics, and in Japanese.



In 1920 the teaching staff included 26 professors, 6 assistant professors, and 156 lecturers and demonstrators. Professors and most of the lecturers are paid fixed salaries, and the remainder receive fees. Provision is made for a pension scheme for professors appointed since 1898; the benefit will commence after twenty years' service, and after attaining the age of 50 years.

The University has no power to confer honorary degrees, but may admit *ad eundem gradum* graduates of approved Universities, viz., Oxford, Cambridge, London, Durham, Victoria, St. Andrew's, Edinburgh, Glasgow, Aberdeen, Dublin, Queen's of Ireland, Royal of Ireland, Melbourne, New Zealand, Adelaide, and of such other Universities as the Senate may determine.

The number of individual students attending lectures during 1920 was 3,356, viz., 2,579 men and 777 women: 2,629 were matriculated.

Since 1914 there has been an increase of 100 per cent. in the number of students; the following statement shows the number attending each course at different periods since 1914—

Course.	1914.	1913.	1910.	1920.		
				Men.	Women.	Total.
Degree and Special Courses—						
Arts ... ..	533	458	633	400	391	791
Law ... ..	108	90	189	276	4	280
Medicine ... ..	525	620	881	860	131	991
Science ... ..	72	203	232	129	104	233
Engineering ... ..	103	101	157	229	...	229
Dentistry ... ..	27	24	50	70	4	74
Veterinary Science ... ..	14	6	15	17	...	17
Agriculture ... ..	10	20	27	20	6	26
Architecture ... ..	...	9	40	38	10	48
Japanese and Oriental History ...	...	29	12	19	10	29
Economics and Commerce ...	30	50	93	124	26	150
Diploma Courses—						
Economics and Commerce ...	135	186	183	268	28	296
Pharmacy ... ..	50	91	133	158	33	191
Military History and Science ...	89	...	...	...	...	...
Massage... ..	...	130	102	6	36	42
	1,696	2,017	2,797	2,614	783	3,397
Less Students included in two Courses.	22	22	33	35	6	41
Total, Individual Students ...	1,674	1,995	2,764	2,579	777	3,356

Particulars of exhibitions, bursaries, scholarships, and fellowships provided for the assistance of University Students are shown on a later page.

#### Clinics.

The Royal Prince Alfred Hospital is a General Hospital and Medical School for the instruction of University students and for the training of nurses. Students must pass through the hospital curriculum of study and practice in order to obtain the certificate of hospital practice necessary to qualify for admission to the final degree examination in medicine and surgery. All appointments to the medical and surgical staff of the hospital are made conjointly by the Senate of the University and the directors of the Hospital.

Sydney Hospital, founded in 1811, also provides a Clinical School under the direction of a Board of Medical Studies, and all appointments of clinical lecturers and tutors are subject to the approval of the Senate.

Other hospitals recognised as places where studies may be undertaken in connection with the Faculty of Medicine are:—The Royal Hospital for Women, Royal Alexandra Hospital for Children, St. Vincent's Hospital, the Gladesville and Callan Park Mental Hospitals, the Women's Hospital, the Renwick Hospital for Infants, and the South Sydney Hospital for Women.

In connection with the Department of Dental Studies, the United Dental Hospital of Sydney was established in 1901, and provides facilities for the instruction of students. It was amalgamated with the Dental Hospital of Sydney in 1905. The University lecturers in surgical and mechanical dentistry are, *ex officio*, honorary dental surgeons of the hospital.

#### *Extension Lectures.*

University Extension Lectures were inaugurated in 1886, and have been conducted since that date under the direction of a University Extension Board of eighteen members appointed annually by the Senate. Courses of lectures are given in various centres at a charge of £2 per lecture in country centres, and of £3 elsewhere, upon topics of literary, historical, and scientific interest. At the conclusion of a systematic course, which consists of ten lectures, an examination may be held and certificates awarded to successful candidates.

#### *Tutorial Classes.*

In accordance with the provisions of the University Amendment Act of 1912, the Senate has established evening Tutorial classes, which are open to unmatriculated as well as to matriculated students; diplomas are issued to persons who have studied in these classes for at least one year in any one subject. Tutorial classes, which may be established in particular branches of study upon specific requisition by intending students, have been formed in suburban and country centres as well as at the University; and at Broken Hill a resident tutor was established in 1920. There were over 1,300 students in regular attendance at systematic courses of study during 1920, and fifty-one tutorial classes were at work.

#### EDUCATION DEPARTMENT'S CERTIFICATE EXAMINATIONS.

Formerly, public examinations were conducted by the University for the purpose of testing the educational fitness of intending students and of candidates for matriculation, and the standards of these examinations became generally accepted by public bodies. But the reorganisation of the whole scheme of secondary education in 1911, which brought about a co-ordination of curricula between public and private schools and established secondary schools as a connecting link between primary school and University, necessitated the establishment of a system of examinations with a wider purpose. A new scheme was formulated by the Department of Education with the concurrence of the University authorities, who agreed to accept as evidence of satisfactory educational qualification appropriate certificates issued by the Department and, in 1916, discontinued holding further public examinations, with the exception of an annual special matriculation examination, on the results of which a number of University scholarships and prizes are awarded.

The regulations of the Department provide for three certificates to mark definite stages in the progress of school pupils, the examinations being open to students of State and private schools. The Qualifying Certificate indicates that the holder has completed the primary course satisfactorily, and is fitted to enter upon a secondary course. The Intermediate Certificate marks the completion of the higher primary stage constituting the first three years of

the secondary course. The Leaving Certificate is obtainable on graduation from the full five-years' course of the High Schools, and is accepted as indicative of adequate preparation for the University, if it shows a pass in matriculation subjects.

The first examination for the Qualifying Certificate was held in December, 1911. The following are particulars regarding the examinations held during that year and during each of the past five years, the candidates being pupils of public and private primary schools:—

Year.	Candidates.	Passes.		Bursaries Awarded.	
		Number.	Per cent.	Boys.	Girls.
1911	10,708	7,092	66.2	186	116
1916	18,963	12,159	64.1	268	129
1917	22,965	15,262	66.5	217	136
1918	26,489	17,853	67.4	227	134
1919	27,450	17,660	64.3	167	128
1920	31,159	22,143	71.1	192	175

In the allotment of certificates in connection with this examination, the teachers' reports and the record of school attendance are taken into account. Since the inauguration of these examinations the number of candidates has grown very rapidly, but it is still probably less than 50 per cent. of the number of children who annually complete the primary stage of their education. Approximately two-thirds of the candidates are successful.

The Examining Board in connection with the Intermediate and Leaving Certificates consists of the Director of Education, the Chief Inspector, the Principal of the Teachers' College, the Inspector of Secondary Schools, and four delegates appointed by the University.

The first examination for Superior Public School Certificates was held in December, 1914; 566 candidates who had completed the two-years course sat for examination, and 469 passed; in 1920 the candidates numbered 1,415 and the passes 1,225, viz.:—Commercial, 274 candidates and 182 passes; Junior Technical, 409 candidates and 338 passes; Domestic, 732 candidates and 705 passes. The certificate gained in the Commercial Continuation Schools, where a three-years course was initiated in 1918, is the Intermediate Certificate.

Examinations for the Intermediate Certificate were commenced in November, 1912. The results of the examinations during the various years are shown below.

Year.	Candidates.	Passes.		Scholarships Awarded.		Bursaries Awarded.	
		Number.	Per cent.	Boys.	Girls.	Boys.	Girls.
1912	1,571	645	41.1	43	2	56	62
1916	2,781	2,014	72.4	60	4	...	...
1917	3,004	2,019	67.2	...	...	5	7
1918	3,224	2,296	71.2	31	4	5	12
1919	2,883	2,238	77.6	9	2	3	9
1920	3,457	2,552	73.8	43	8	12	4

The decrease in the number of candidates in 1919 was due to the extension, in 1918, of the two-years' course to three, and this innovation, so far as it

affected students who completed their first-year course in 1917, resulted in an improved percentage of passes.

In 1920 the number of candidates from State Schools, including those from the Commercial Continuation Schools was 2,045, and the number of passes was 1,618, or 79 per cent. From private schools there were 1,686 candidates and 1,116 passes, or 66.2 per cent.

The first Leaving Certificate Examination was held in November, 1913. On the results of this examination, University bursaries, the exhibitions instituted under the University Amendment Act, and scholarships for the Diploma Courses at the Technical College, are awarded. The results during 1913 and during the past five years have been as follows :—

Year.	Candidates.	Passes.		Scholarships Awarded.		University Bursaries Awarded.		University Exhibitions Awarded.	
		Number.	Per cent.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
1913	156	123	78.8	...	...	20	4	65	25
1916	866	690	79.7	22	...	27	3	151	49
1917	928	727	78.3	19	...	23	16	149	51
1918	1,051	870	82.8	16	...	29	5	155	45
1919	1,129	878	77.7	15	2	27	4	155	45
1920	1,263	942	74.6	14	1	21	6	144	56

In 1920 there were 632 candidates from State Schools, and the passes, numbering 513, represented 81 per cent.; 631 candidates from private schools secured 429 passes, or 68 per cent.

If this table be compared with the two foregoing, it will be observed that though considerable "wastage" is apparent between the third and fifth years of the Secondary Course, owing to pupils not completing the full course, yet a rapid extension of secondary education is proceeding, and the increasing numbers sitting for the lower examinations presage more growth in the secondary system.

The Intermediate and Leaving Certificate Examinations have been adopted as standards for the admission of persons to the various branches of the public service of the State, and are accepted widely in commercial circles.

Certificates of proficiency are awarded to pupils of Evening Continuation Schools whose attendance and work have been satisfactory throughout the course. In 1920 there were 376 candidates at the examination for certificates, and 340 passed; in the previous year 177 passed, out of 254 candidates.

#### TECHNICAL EDUCATION EXAMINATIONS.

The following are particulars of examinations conducted in the Technical Branch during the last five years :—

Particulars.	1916.	1917.	1918.	1919.	1920.
Number Examined ...	5,956	6,407	7,410	6,367	9,268
Number of Passes ...	4,464	5,444	5,648	5,003	7,747
Percentage of Passes ...	74.9	84.9	76.2	78.5	83.5
Number Obtaining Honours ...	850	512	785	652	1,154

These figures afford evidence of a very encouraging growth in this important branch of education, but a wider expansion is desirable. The year 1919 was affected adversely by an epidemic of influenza.

## SCHOLARSHIPS AND BURSARIES.

It is the policy of the State to assist promising students, especially to the High Schools and to the University, by means of scholarships and bursaries.

Scholarships tenable at State Schools, which were awarded formerly on the results of the Qualifying Certificate examination, were discontinued in 1915, when arrangements were made for the free supply of school material; a few limited scholarships are provided to enable pupils to attend the Sydney Grammar School.

Scholarships are awarded annually on the result of the Intermediate Certificate examination to students of the Agricultural High School, entitling the holders to free education for two years at the Hawkesbury Agricultural College, with monetary allowance and text-books. The holders commence on the second year's course at the College.

Boys who intend to become teachers may gain at the Intermediate Certificate examination two-year scholarships tenable at District or High Schools. Text-books are supplied, and an allowance is granted.

Scholarships, admitting to courses of technical instruction, are provided to assist students to pass from the Day and Evening Junior Technical Schools to the Trades and Domestic Science Schools, from Lower to Higher Trades Courses, and from Trades to Diploma Courses. Students holding Leaving Certificates may obtain entrance by Scholarship to the Diploma Courses; and those who have gained the Intermediate Certificate at the Technical High School may obtain scholarships enabling them to enter the Higher Trades Courses. These technical scholarships carry a grant of text-books and appliances and exemption from fees, and holders must be engaged in the trade or profession for which the course has been established.

Students who pass through the Diploma Course with sufficient distinction are enabled to continue their education at the University by means of scholarships valued at £100 per annum.

*Bursary Endowment.*

In 1912 the Bursary Endowment Act was passed by Parliament providing public moneys for bursaries, tenable in public or private secondary schools and in the University of Sydney. This fund is administered by a specially constituted board, consisting of two representatives each of the University of Sydney, of the Department of Education, and of the Secondary schools registered under the Act. A representative of the Department of Education is chairman.

Schools desiring to benefit under the Act must register with the Bursary Endowment Board; and such registration, which is effective for two years, is conditional upon the suitability of school premises, the organisation and equipment of the school, the method and range of instruction, efficiency of the teaching staff, and the general conduct of the school. The inspection is conducted by the Inspector of Secondary schools under the Department of Education.

Under the general conditions attached to registration a school must be capable of providing a full course of instruction beyond the primary stage, to a standard not lower than that of the Leaving Certificate. As at 31st December, 1920, eighty schools were registered under the Bursary Endowment Act, while sixty-five other private schools were recognised as qualified to educate pupils to the Intermediate Certificate stage of the Secondary Course.

Bursaries admitting to a course of secondary instruction are awarded to pupils between the ages of 12 and 14 years, whose parents' income is less than £200 per annum, or not more than a quota of £50 per annum for each member of the family, exclusive of children earning 10s. or more weekly. One-third of the bursaries are available for pupils of Metropolitan and

suburban schools. Their award is determined upon the results of the Qualifying Certificate examination; the candidates are classified in two groups, viz., those from schools with less, or with more than 100 pupils in enrolment. Competition is restricted within the groups, and the bursaries are divided in approximate ratio to the number of candidates from the two groups of schools who pass the Qualifying Certificate examination. The number of bursaries is determined by the Board in accordance with the amount available in the current account of the Endowment Fund, and varies between three hundred and four hundred.

Each bursary comprises a grant of text-books not exceeding £1 10s. per annum, and a monetary allowance of £40 for the first and second years, and £50 for the third and fourth years, to holders who live away from home in order to attend school, the allowance being reduced in the case of those who reside at home. The bursaries are extended usually for a fifth year.

Bursaries are awarded upon the results of the Intermediate Certificate Examination. These bursaries are of the value of third and fourth year bursaries, and are tenable for two or three years.

Bursaries tenable at the University of Sydney may be awarded to candidates at the Leaving Certificate examination who are under 19 years of age and whose parents' means are unequal to the expense of the University education. A full bursary entitles the holder to a grant for text-books not exceeding £5 per annum, and to free education. An allowance not exceeding £25 per annum is made to those who need not board away from home, in order to attend the University, and not exceeding £65 per annum to those who must do so. The number of such bursaries awarded annually ranges from twenty-five to forty. A bursar who wins and elects to hold a Scholarship or Exhibition offered by the Senate of the University is entitled to receive from the two sources conjointly an allowance not exceeding £100 per annum.

The bursaries made available by the Bursary Endowment Board for tenure during 1920 were as follows:—

Classification.	Tenable at—	Number tenable, 1920.		
		Boys.	Girls.	Total.
Bursaries ... ..	High Schools ... ..	132	112	244
	District Schools ... ..	2	1	3
	Registered Secondary Schools ... ..	58	62	120
		192	175	367
Intermediate Bursaries..	High Schools ... ..	12	4	16
University Bursaries ...	Sydney University ... ..	21	6	27

At 30th June, 1921, excluding 431 holders of war bursaries, there were 1,488 pupils holding bursaries under the Bursary Endowment Act; 1,362 were attending courses of secondary instruction, and 126 were attending University lectures. The annual monetary allowances paid were as follow:—

Allowances.	Pupils.	Allowances.	Pupils.
£		£	
12	455	40	386
18	144	50	248
24	129	65	61
25	65		
		Total ...	1,488

War bursaries are provided by the Bursary Endowment Board for children of incapacitated and fallen soldiers; and may be awarded to assist holders during primary, secondary, or University courses, or in technical trade or agricultural instruction; they may be applied also to augment the wages of apprentices. War bursaries are tenable for a period not exceeding two years, but are subject to renewal. Up to 30th June, 1921, war bursaries had been awarded in 793 cases; the number in operation at that date was 431, and the expenditure for the year amounted to £6,440.

A sum of money, amounting to £7,325, was raised by public subscription in 1919 to provide war bursaries, and a bill has been introduced into Parliament to vest the fund, known as the Anzac Memorial Bursary Fund, in the Bursary Endowment Board.

In addition to the bursaries made available by the Bursary Endowment Board, three bursaries, tenable for three years, may be awarded at the Hawkesbury Agricultural College; three, tenable for two years, at each of the Farm Schools at the Bathurst and Wagga Experiment Farms; and one, tenable for one year, at the Apprentice School at Wollongbar Experiment Farm.

#### *University Exhibitions, Scholarships, and Bursaries.*

An extensive system of exhibitions, bursaries, scholarships, and fellowships, has rendered the advantages of University education accessible to almost any proficient student, irrespective of his means. These are so arranged that brilliant graduates are enabled to pursue their studies in the highest branches of learning either at Sydney or other approved University, free from financial embarrassment.

The University Amendment Act, 1912, provides for the allotment of exhibitions by the Senate to students desirous of entering Sydney University. The exhibitions are awarded on the results of the Leaving Certificate examinations and exempt the holders from payment of matriculation, tuition, and degree fees, and they are tenable in all faculties and departments. The number awarded yearly is at the rate of one for every 500 persons in the State between the ages of 17 and 20 years, as shown by the latest census records. The exhibitions are open for competition to students of State High Schools and registered schools who have completed the secondary course. A small number of exhibitions, not exceeding 5 per cent. of the total number awarded, are open to competitors other than school students, provided they have been residents of New South Wales for three years.

As a result of the Leaving Certificate Examination, held in November, 1920, the Senate allotted 200 exhibitions in the following faculties:—Arts, 57; Medicine, 59; Science, 31; Engineering, 19; Law, 13; Economics, 9; Architecture, 5; Dentistry, 4; and Agriculture, 3. Ninety-six were allotted to the State schools, and 104 to the registered secondary schools.

Private foundations have provided seventeen bursaries, which are at the disposal of the Senate as a means of giving limited assistance to impecunious students. They are supplemented on the part of the University by an exemption from matriculation and lecture fees, except in the case of those available in the professional schools.

During 1920 the number of students in attendance at University Lectures who were exempt from payment of fees was 1,431, including 788 public exhibitioners and bursars, and 622 students of the Teachers' College and teachers of schools. Thus it will be seen that University education is provided free for over 40 per cent. of the students who take advantage of it.

Over forty scholarships and a considerable number of annual prizes have been founded privately as a reward for meritorious students, without regard

to their circumstances. Research work and post-graduate studies are encouraged and facilitated by the award of Travelling Scholarships and Fellowships, including one Rhodes scholarship annually.

#### COMMERCIAL EDUCATION.

Preparatory education for commercial life has been provided in the State primary schools, where the course of instruction, especially in the Commercial Continuation Schools, includes elementary training in many commercial subjects; economics, shorthand, and business principles and practice are included in the curriculum of the High Schools. Many private schools and colleges also afford facilities for commercial training, both by day and evening classes; book-keeping, business methods, shorthand, and typewriting are the main subjects taught.

A complete return of the number of pupils taught in these special subjects is not available, but statistics of the State Commercial Continuation Schools have been supplied on a previous page, and particulars obtained from Business and Shorthand Schools under private management show that seventeen were in operation in 1920 with 125 teachers, and a total enrolment of 2,375 boys and 4,655 girls; the average attendance during the year was 2,427.

Advanced preparation for commercial life has been provided in some measure by the University course in Economics and Commerce. The diploma course was converted in 1913 into a degree course. This section of the University teaching was promoted originally by the Sydney Chamber of Commerce in the form of brief lecture courses available to the general public, and in examinations conducted for senior and junior commercial certificates issued by that body.

A special grant is paid from the Public Revenue of the Commonwealth to the University to assist in the teaching of languages serviceable to the development of commercial relations between Australia and other countries. By this means a lectureship in Japanese language and Oriental history has been established.

#### DOMESTIC TRAINING.

In the reorganisation of Superior Public Schools provision was made for the establishment of Domestic Superior Public Schools for girls. The syllabus came into operation at the beginning of 1913, and the course includes household accounts, cookery, laundry work, dressmaking, millinery, gardening, art of home decoration, music, social exercises, morals and civics, and physical training, as well as a course in English, designed to encourage a taste for wholesome reading.

Three hours per week are devoted to cooking and laundry, the course being practical and diversified. Personal hygiene, nursing of sick, and care of infants receive considerable attention.

Botany and gardening are taught, and, while the course is designed primarily to train girls to manage a home, provision is made also for a training in commercial horticulture, and after the completion of the domestic course a third year course of business lessons has been arranged to fit girls to take up work in commercial houses in the city.

During 1920 sixty-eight schools for practical cookery were in operation, the enrolment being 5,280; in addition, demonstrations in cooking were given to 5,521 pupils; sixty-eight teachers of cookery were employed. The Technical College provides more advanced courses.

A School of Domestic Science was established recently at the Sydney University. The course for the degree of Bachelor of Science in Domestic Science covers a period of three years, and includes Physics, Chemistry,



Physiology, and Botany or Zoology, Public Health, and the course in Domestic Science at the Sydney Technical College.

#### INDUSTRIAL TRAINING.

Industrial training is connected intimately with the question of apprenticeship, which is being investigated at the present time by the Board of Trade, with the object of devising a satisfactory system of apprenticeship with due regard to the welfare of young workers and to the requirements of the modern industrial organisation. Technical instruction in the form of manual training is a feature of the primary school syllabus, and a preparatory course leading to the trade courses under the Technical Education System is given in the Junior Technical Continuation Schools.

The course in the Continuation Schools, covering two years, was planned with the object of supplying a useful introduction to industrial occupations for boys between the age of 13 or 14 years, when they complete the primary course, and the age of 16 years, when apprenticeship usually commences.

The subjects of instruction which were chosen with the intention of meeting the needs of the future artisan are essentially of a practical nature, viz.:—Practical Drawing and Workshop Practice, English, Practical Mathematics, History and Civics, Industries and Elementary Science; at the same time attention is given to the training of pupils in citizenship, and corporate life is made a feature of the school organisation.

Higher courses of instruction are given in the institutions under the Technical Education system already described. Consideration has been given to the question of extending the period of compulsory education beyond the present limits as defined by the Public Instruction Act. For apprentices in a number of trades a measure of compulsion is supplied already by means of awards and agreements under the Industrial Arbitration system. In some instances, they contain clauses which make attendance at a technical course obligatory on the part of the apprentices, while the employers are required to pay the fees, other awards require the apprentices to obtain certificates of attendance before admission to the trade as journeymen. In some trades in which attendance is optional, the employers must pay the fees of the apprentices who attend the technical schools, and in others higher rates of wages are prescribed for apprentices who pass the technical examinations.

In a few instances provision has been made either by award or by the voluntary action of the employers for attendance of apprentices at day classes, but generally the apprentice is regarded as a full time wage-earner and attendance is in addition to the day's labour in the workshop.

#### AGRICULTURAL AND RURAL TRAINING.

Education in subjects pertaining to rural industries commences in the primary schools with the teaching of the elementary principles of agriculture, both practical and theoretical. School gardens and experiment plots are adjuncts to many State schools, and grants are made of farm, vegetable, and flower seeds. In 1920, over 9,600 pupils were being instructed in elementary agriculture, and 31,750 were being taught horticulture.

In the Murrumbidgee Irrigation Area a special teacher of agriculture visits the seven local schools for the purpose of supervising a special course in practical experimental agriculture. Instruction in general farm work is a feature of the treatment of delinquent and neglected children at the Farm Schools at Gosford and Mittagong.

In the country high schools at Albury, Orange, and Wagga, and in the Casino District School, courses in agriculture are provided, and a special Agricultural High School is situated at Hurlstone Park. The grounds at Hurlstone Park, covering 26 acres, are used for teaching practical operations and for experimental work in the growth of crops, action of fertilisers, etc. The course at this school extends over three years, and covers a general English education in addition to science with laboratory practice, and agriculture with field work. The training at Hurlstone Agricultural High School forms a preparatory course to the more advanced work at Hawkesbury Agricultural College. The residence of the late Sir Samuel McCaughey, at Yanco, has been acquired recently for the purpose of an Agricultural High School. During 1920, there were 150 students at Hurlstone. For resident students the fee is £6 6s. per quarter; for day students no fees are charged.

Supplementing the training up to the standard of the Leaving Certificate Examination given to pupils under the Department of Education, a graduated scheme of agricultural instruction is organised in connection with the development of rural industries, by the Department of Agriculture of New South Wales. Full particulars relating to the Hawkesbury Agricultural College and the Experiment Farms will be found in the chapter relating to Agriculture; there were 427 students at these institutions during 1920.

The Diploma course at the Hawkesbury Agricultural College covers three years' work, but certificates may be obtained for shorter courses. Students holding the Diploma of the College may be permitted to complete the course for the degree of Bachelor of Science in Agriculture at the University in three years instead of four.

The final stages of agricultural education and training are reached at the University, where, in the beginning of 1910, a degree course in Agriculture was instituted. A four-years' course leads to the degree of Bachelor of Science in Agriculture, and, in providing a higher training ground for teachers and experts, completes the whole system of preparation for rural industries. The Experiment Farms are available for the practical and experimental work in connection with the degree course.

In Veterinary Science a course extending over a period of four years leading to the degree of Bachelor of Veterinary Science is provided at the University.

#### SCHOOL SAVINGS BANKS.

A system of school savings banks in connection with the State schools was initiated in the year 1887, and by this means £754,645 have been received in deposits, and £152,187 transferred to the Government Savings Bank as children's individual accounts. The object of these banks is to inculcate principles of thrift during the impressionable ages.

In 1920 these banks numbered 842; the deposits amounted to £58,811, and withdrawals, £55,880; £7,569, representing individual sums of £1 and upwards, were transferred to the Government Savings Bank, leaving £17,827 as credit balances in the school banks.

#### DELINQUENT, DEFECTIVE, AND DEPENDENT CHILDREN.

Special provision has been made for delinquent, defective, and dependent children in several reformatories and industrial schools maintained by the State and in private charitable institutions.

The education of deaf and dumb and blind children is undertaken at a school in connection with the Institution for the Deaf and Dumb and the Blind; deaf mutes are trained also at two religious institutions.

Particulars regarding the operation of these institutions will be found in a later chapter of this Year Book.

Special measures have not yet been taken for the education of feeble-minded children, but the matter is under consideration, and statistics as to retardation are collected by the Department of Education.

#### MEDICAL INSPECTION OF CHILDREN.

The Medical Branch of the Department of Education undertakes the medical inspection of the school children attending State and private schools; the work is arranged so that each child is examined every three years. Treatment of physically defective children in country districts is provided by means of a travelling school hospital and travelling clinics; there is also a Metropolitan dental clinic. Details regarding the medical inspection of school children and the school clinics will be given in the chapter of the Year Book relating to Social Condition.

The work of the medical officers of the Department of Education includes the investigation of epidemics of infectious diseases affecting school children; the inspection of school buildings; courses of lectures at the Teachers' College; lectures to senior girls in Metropolitan schools on the care of babies, personal cleanliness, home hygiene, sick-nursing, etc., and lectures to parents.

#### STATE SCHOOL TEACHERS.

##### *Training.*

State school teachers are trained at the Teachers' College, where two distinct types of course are provided. The short course was established in 1911 to obviate the necessity of employing untrained teachers. This training, which is conducted at Hereford House, an adjunct to the Teachers' College, extends over twelve months. Upon completion of the course the teachers are appointed to small rural schools or as assistants in the larger schools. About 300 teachers are trained by this means each year.

The ordinary course at the Teachers' College extends over a period of two years. It prepares teachers for the various classes of primary and infant schools, and on its completion students may qualify for second-class certificates. Those who elect to withdraw at the end of the first year are eligible for third-class certificates. A period of practical work must be accomplished satisfactorily before classification is awarded. Special courses are arranged with reference to departmental requirements and to the capabilities of individual students, and evening extension courses in kindergarten and infant teaching are provided.

Professional training is conducted at three Demonstration Schools—Blackfriars, North Newtown, and Darlington—and departments have been secured in several other schools for practical work in connection with the Teachers' College.

The minimum age of admission to the College is 17 years, that is, three years beyond the primary school age, and during this period boys who guarantee to become teachers may obtain an allowance to enable them to undergo a preparatory course in District or High Schools.

In addition to the teachers trained by the Department of Education, qualified teachers are admitted from outside the Service; those appointed to primary schools are placed on probation for six months, and those appointed to secondary schools, if requiring additional professional training, must take the University course leading to the Diploma in Education.

A portion of land within the Sydney University has been acquired as a site for the Teachers' College, and the building is now partly completed. The new College provides training for teachers for private secondary and primary schools, as well as for the State service. A hostel for the accommodation of women students has been established in connection with the College.

There were 849 students enrolled at the Teachers' College in 1920.

Students.	Men.	Women	Total
First year ... ..	87	106	193
Second year ... ..	76	90	166
Third year ... ..	43	51	94
Fourth year ... ..	16	51	67
Fifth year ... ..	.....	3	3
Graduate ... ..	1	4	5
Short Course ... ..	63	252	315
Cookery ... ..	.....	6	6
Total ... ..	283	563	849

Of these students attending the Teachers' College 817 were scholarsholders and 30 were exempt from the payment of fees.

The staff of the College consists of a Principal, Vice-Principal, 46 lecturer, 6 visiting lecturers, a warden of women students, and 8 clerical and library assistants. Members of the teaching staff are afforded opportunities to study abroad, and leave of absence, on full pay, may be granted for this purpose.

#### *Conditions of Service.*

The salaries paid to the State school teachers depend upon their efficiency and upon the status of the schools in which they are employed. To qualify for a higher grade the teachers must pass a series of examinations, and to obtain promotion they must show the requisite degree of efficiency in practical work. The scale of salaries was determined by agreement between the authorities and the Teachers' Federation, and was the subject of an Industrial Arbitration Award dating from 1st July, 1920. The rates of salary so determined are shown below. The teachers over 21 years of age receive an additional amount, viz., men £21 per annum and women £17 per annum in view of the increase in the living wage as declared by the Board of Trade in October, 1920.

The salaries of High School teachers under the schedule were as follows:—

Teachers.	Class of School.		
	III.	II.	I.
	£	£	£
Head Master ... ..	611	676	750
Head Mistress ... ..	488	540	600
Masters of Subjects ... ..	.....	520	546
Mistresses of Subjects ... ..	.....	416	436
Assistant Masters ... ..	Range, £403 to £507 in 4 years.		
Assistant Mistresses ... ..	,, £325 to £403 in 4 years.		

The junior staff of the High Schools are paid at the same rates as assistants of the same classification in primary schools.

In determining the rates of salary for primary school teachers, two factors, viz., position and personal qualifications, are taken into consideration; a quota of salary is assigned to each, and the teacher is paid the sum of the amounts. The positions are valued in accordance with the classification of the schools, which are graded according to the number of pupils in average attendance, on the basis of a group unit of 40 pupils per teacher. The quota of salary allotted to the positions in schools of each category are shown in the following table:—

Class of School.	Average Attendance.	Teachers in charge and Headmasters.	Mistresses.		First Assistants.	
			Girls'.	Infants'.	Men.	Women.
VI	40 or less	£ 260	£ .....	£ 208	£ .....	£ .....
V	41-200	299	.....	240	.....	.....
IV	201-540	325	240	260	234	188
III	541-750	351	260	.....	247	195
II	751-1,000	377	286	.....	273	221
I	Over 1,000	403	305	.....	299	240

The position quota for assistants was £208 for men and £169 for women. The teachers are classified in six grades according to attainments and teaching efficiency; the quota of salary attached to each grade was as follows:—

Teachers.	Class 3.		Class 2.		Class 1.	
	B	A	B	A	B	A
Men ...	£ 52	£ 78	£ 130	£ 156	£ 208	£ 234
Women ...	39	65	104	123	169	188

A comparative statement of the teaching staff of the State schools for the years 1911 and 1920 is shown below; those in the Technical Education Branch are not included.

The proportion of unclassified teachers is large, because there are included in this category ex-students of the College whose classification is deferred until they have proved their practical skill during a period of service as assistants.

Teachers.	1911.			1920.		
	Men.	Women.	Total.	Men.	Women.	Total.
Teachers and Assistants—						
First Class ... ..	255	71	326	375	126	501
Second Class ... ..	750	542	1,292	1,172	895	2,067
Third Class ... ..	1,259	699	1,958	1,186	1,428	2,614
Unclassified ... ..	803	1,139	1,942	363	1,503	1,866
Training Students ... ..	144	174	318	275	549	824
Cookery Teachers ... ..	...	47	47	...	68	68
Sewing Mistresses... ..	...	112	112	...	171	171
High School Teachers ... ..	59	38	97	310	274	584
Subsidised School Teachers ... ..	39	386	425	26	483	509
Total ... ..	3,309	3,208	6,517	3,707	5,497	9,204

University education is becoming increasingly popular with teachers, and at the end of 1920 there were 652 graduates in the teaching service, viz., 378 men and 274 women.

#### EDUCATIONAL AND SCIENTIFIC SOCIETIES.

Many organisations are in existence in New South Wales which have for their objective the encouragement of professional interests, and the advancement of Science, Art, and Literature. The Commonwealth Government has afforded a measure of recognition to the efforts of Australian men of letters by establishing in 1908 a Commonwealth Literary Fund to provide pensions and allowances to literary men and their families.

As far back as the year 1821 a scientific society, under the title of the Philosophical Society of Australasia, was founded in Sydney, and after many vicissitudes of fortune was merged, in 1866, into the Royal Society of New South Wales. Its objects are the advancement of science in Australia, and the encouragement of original research in all subjects of scientific, artistic, and philosophic interest, which may further the development of the resources of Australia, draw attention to its productions, or illustrate its natural history.

The study of the botany and natural history of Australia has attracted many enthusiastic students, and the Linnæan Society of New South Wales was established for the special purpose of furthering the advancement of these particular sciences. The Society has been richly endowed, and possesses a commodious building at Elizabeth Bay, Sydney, to which are attached a library and museum. The proceedings are published at regular intervals, and contain many valuable papers, with excellent illustrations of natural history.

Other important scientific societies are the Royal Zoological Society of New South Wales, inaugurated in 1879; a branch of the British Medical Association, founded in 1881; a branch of the British Astronomical Association; the Australian Association for the Advancement of Science; the Royal Geographical Society; the University Science Society; Australian Historical Society; and the Naturalists' Society of New South Wales.

All the learned professions are represented by associations or societies.

The Royal Art Society holds an annual exhibition of artists' work at Sydney; and of the many musical societies, mention may be made of the Royal Sydney Apollo Society, and the Royal Sydney Philharmonic Society.

#### WORKERS' EDUCATIONAL ASSOCIATION.

The Workers' Educational Association of New South Wales was founded at a conference called by the Labour Council of New South Wales in June, 1913, and since that date the new movement, despite vicissitudes of fortune, has grown considerably. Its main purpose is "to bring the mellowing influence of education into the Labour Movement," and its appeal is to workers of all degrees. In this endeavour it works in conjunction with other educational associations (particularly at the University) and with working-class organizations. It publishes a series of books on matters of local and general economic importance. In 1920 the membership of the association consisted of 201 individual members and 103 organizations, including 38 trade unions, were affiliated with it.

#### CONSERVATORIUM OF MUSIC.

The State Conservatorium of Music, which was established in 1915, provides tuition in every branch of music, from the elementary to the advanced stages. The studies are divided into two sections; the Music School Section consists of three courses, viz., elementary, intermediate, and

advanced—the last-mentioned extending over two years. A certificate is granted at the conclusion of each course. The advanced grade certificate of the Music School Section entitles the holders to admission to the Diploma Section, in which a course of two years' tuition, leading to the Professional Diploma, is given under the personal direction of the Director of the Conservatorium. A Preparatory Course in all subjects is available for juveniles who have not previously received musical tuition. The expenditure on salaries and scholarships during the year 1920 amounted to £12,285, but this amount was almost, if not entirely, covered by revenue from tuition fees and sundry receipts.

#### MUSEUMS, LIBRARIES, AND ART GALLERIES.

Recognising that Museums, Libraries, and Art Galleries are powerful factors in promoting the intellectual wellbeing of the people, the Government of New South Wales has been active in founding and maintaining such establishments. The expenditure by the State on buildings for Museums, Libraries, and Art Galleries to 30th June, 1921, amounted to £423,026.

##### *Museums.*

The Australian Museum, the oldest institution of its kind in Australia, was founded in Sydney in 1836 as a Museum of Natural History; it contains fine specimens of the principal objects of natural history, and a valuable collection of zoological and ethnological specimens of distinctly Australian character. A fine library, containing many valuable publications, is attached to the institution. Lectures and gallery demonstrations are given in the Museum, and are open to the public. During the year 1920, visitors to the Museum numbered 216,856. On Mondays students and artists only are admitted.

In 1853 the Museum, till then managed by a committee, was incorporated under control of trustees, with a State endowment, which is now supplemented by annual Parliamentary appropriations. The expenditure during the year 1920 amounted to £13,332.

A Technological Museum was instituted in Sydney at the close of 1879, under the administration of a committee of management appointed by the trustees of the Australian Museum. The whole original collection of some 9,000 specimens was destroyed in 1882 by fire. Efforts were at once made to replace the lost collection, and in December, 1883, the Museum was again opened to the public. In 1890 it was transferred to the Department of Education, as an adjunct to the Technical College, and now contains a valuable series of specimens illustrative of various stages of manufacturing, and an excellent collection of natural products acquired by purchase, gift, loan, or exchange. Technological Museums are established also at Goulburn, Bathurst, West Maitland, Newcastle, and Albury.

Research work is conducted by the scientific staff of the Technological Museum in connection with the development of the natural vegetable resources of Australia, particularly in respect of the pines and eucalypts.

The functions of the Mining and Geological Museum include the preparation and collections of minerals to be used as teaching aids in schools and in other institutions.

The Agricultural and Forestry Museum is an adjunct of the Department of Agriculture.

The public have access to the "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, the Museum of Normal and Morbid Anatomy, attached to the Sydney University, and the National Herbarium and Botanical Museum at the Botanic Gardens. Housed in the Macleay Museum is the Aldridge collection of Broken Hill minerals.

*Public Library of New South Wales.*

The Public Library of New South Wales was established, under the designation of the Free Public Library, on 1st October, 1869, when the building and books of the Australian Subscription Library, founded in 1826, were purchased by the Government. The books thus acquired formed the nucleus of the present Library. In 1890 the Library was incorporated with a statutory endowment of £2,000 per annum for the purchase of books.

The scope of the Public Library, which is essentially a reference institution, is extended by a loan system, under which books are forwarded to country libraries, schools of arts, progress associations, lighthouses, individual students in the country, and to Public School Teachers' Associations, and branches of the Agricultural Bureau.

In 1920 the Reference Department of the Public Library contained 234,000 volumes, including volumes for country libraries under the lending system. The attendance of visitors during 1920 numbered 190,520.

In 1899 Mr. David Scott Mitchell donated to the trustees of the Public Library a collection of 10,024 volumes, together with 50 valuable pictures, and at his death, in 1907, bequeathed to the State the balance of a unique collection, principally of books and manuscripts relating to Australasia, and containing over 60,000 volumes, and 300 framed paintings of local historic interest, valued at £100,000. He endowed the Library with an amount of £70,000, from which the income amounting to about £2,750 per annum is expended on books and manuscripts. In 1920 there were 103,992 volumes in the Mitchell Library, which is located in a separate building, opened in March, 1910. There were 18,700 visitors during the year.

The total cost to the State of the Public Library buildings was £28,957, and of the Mitchell Library £43,118.

The following statement shows the expenditure of the Public Library, including the Mitchell Library, during the last five years:—

Year.	Salaries.			Books, etc., and Binding.	Miscel- laneous.	Mitchell Library Endowment Account.	Total.
	Reference.	Mitchell.	Country Libraries.				
	£	£	£	£	£	£	£
1916	4,895	2,494	347	3,350	1,500	2,035	14,621
1917	4,961	2,650	584	2,124	1,837	2,705	14,861
1918	4,805	2,964	700	2,702	2,327	1,593	15,091
1919	5,156	2,804	835	4,806	2,129	4,676	20,406
1920	6,882	3,283	1,183	4,182	1,902	4,972	22,404

*Sydney Municipal Library.*

The Sydney Municipal Library was formed by the transfer to the City Council in 1908-9 of the lending branch of the Public Library; it contained 36,656 volumes in 1920.

Maintenance costs during 1920 amounted to £9,330, made up as follows:—Salaries, &c., £5,594; books, periodicals, binding, and electric lighting, £3,736.

*Other Libraries.*

Local libraries established in more than 400 centres throughout the State, may be classed broadly under two heads—Schools of Arts, receiving an annual subvention in proportion to the amount of monetary support accorded by the public; and Free Libraries established in connection with



municipalities. Under the provisions of the Local Government Act, any shire or municipality may establish a public library, art gallery, or museum.

The library of the Australian Museum, though intended primarily as a scientific library for staff use, is accessible to students, and about 22,850 volumes may be found on the shelves.

The library in connection with the Technological Museum, at the Central Technical College, and its branches, contains approximately 8,500 textbooks.

The Parliamentary Library contains over 52,000 books, and large numbers of volumes are in the libraries of the Law Courts and Government Offices.

#### NATIONAL ART GALLERY OF NEW SOUTH WALES.

The National Art Gallery contains a good collection of paintings and statuary, including some works of prominent modern artists, and some valuable gifts from private persons; there is also a fine collection of water colours.

The present value of the contents of the Gallery is £159,000, and the cost of the building to 30th June, 1921, was £94,437.

The number of paintings, etc., in the Gallery at end of year 1920 was 2,299, and the total amount expended in purchasing works of art during that year was £3,610, distributed as shown below:—

Classification.	Paintings, etc., in Gallery.	Expenditure during year.
	No.	£
Oil Paintings ... ..	485	2,715
Water Colours ... ..	461	234
Black and White Works ... ..	712	61
Statuary, Casts, and Bronzes ... ..	175	547
Various Art Works in Metals, Ivory, Ceramics, Glass, Mosaic, etc. ... ..	466	53
Total ... ..	2,299	3,610

The attendance at the National Art Gallery during 1920 was, on week days, 146,666, and on Sundays, 80,496.

Art students, under certain regulations, may copy any of the various works, and enjoy the benefit of a collection of books of reference on art subjects. In 1894 a system of loan exchanges between Sydney, Melbourne, and Adelaide was introduced, by which pictures are sent from Sydney to Melbourne and Adelaide and reciprocally, with results most beneficial to the interests of art. Since 1895 the distribution of loan collections of pictures to the principal country towns has been permitted for temporary exhibition, and 184 pictures were so distributed among twelve country towns during 1920.

The total disbursements in connection with the National Art Gallery during the year 1920 were £7,624.

The Gallery has received but small support from private endowments, and, consequent upon its limited funds, is restricted mainly to the collection of specimens of contemporary art.

The Wynne Art Prize was instituted in 1897, and consists of the interest on approximately £1,000, which is awarded annually to the Australian artist or sculptor producing the best landscape painting of Australian scenery in oils or water colours, or the best production of figure sculpture.

## PUBLIC FINANCE.

## THE STATE ACCOUNTS.

Since the 1st July, 1895, the State Accounts have been kept on a cash basis, and the financial position can be ascertained readily from the annual statement prepared by the Treasurer; but this involves a consideration of the Consolidated Revenue Account, Closer Settlement Account, Public Works Account, Loans Account, and the various Trust Accounts shown on page 210, which do not form part of the Consolidated Revenue Account. Some little difficulty, moreover, may be experienced in determining the actual position, as due regard must be given to such items as refunds, advances, cancellations, and cross entries.

## THE CONSOLIDATED REVENUE ACCOUNT.

The Consolidated Revenue Account for each year shows the whole of the receipts and expenditure, exclusive of transactions under the Loans Account and the other accounts mentioned in the preceding paragraph. The total amount credited to Consolidated Revenue Account, however, cannot be used for general purposes, as, under section 13 of the Forestry Act, 1916, one-half of the gross proceeds received by the Forestry Commission must be carried to a special account and set apart for afforestation; also, under the Public Works and Closer Settlement Funds Act, 1906, two-thirds of the net proceeds of the sale of Crown lands, exclusive of interest, less 20 per cent., must be paid to the Public Works Fund.

The receipts during the year ended 30th June, 1921, amounted to £34,031,396, and the expenditure to £34,476,892, so that on the operations of the year there was a deficit of £445,496, which increased the accumulated deficiency to £2,249,558. Similar details for each of the last ten years are shown in the following table, also the revenue and expenditure per head of population:—

Year ended 30th June.	Receipts.		Expenditure.		Surplus (+) or deficiency (—).	
	Total.	Per inhabitant.	Total.	Per inhabitant.	On operations of year.	Accumulated at end of year.
	£	£ s. d.	£	£ s. d.	£	£
1912	15,797,136	9 5 7	16,137,279	9 9 7	(-) 340,143	(+) 61,362
1913	16,550,521	9 5 5	17,778,900	9 19 2	(-) 1,228,379	(-) 1,167,017
1914	18,438,228	9 19 8	18,065,189	9 15 7	(+) 373,039	(-) 793,978
1915	18,946,227	10 1 1	18,516,179	9 16 7	(+) 430,048	(-) 363,930
1916	19,703,518	10 8 0	19,553,927	10 6 6	(+) 149,591	(-) 214,339
1917	20,522,097	10 16 8	20,790,895	10 19 7	(-) 268,798	(-) 483,137
1918	21,543,742	11 4 0	21,519,918	11 3 9	(+) 23,824	(-) 459,313
1919	23,448,166	11 18 6	23,233,398	11 16 4	(+) 214,768	(-) 244,545
1920	28,650,496	14 1 2	30,210,013	14 16 6	(-) 1,559,517	(-) 1,804,062
1921	34,031,396	16 5 8	34,476,892	16 10 0	(-) 445,496	(-) 2,249,558

During the period from 1911 to 1914, the revenue increased by 32·8 per cent., and from 1914 to 1921, the ratio was 84·6 per cent., while for the decennium, it was 145·1 per cent. The proportional increases in the expenditure for the corresponding period show greater fluctuations, as in the first three years the percentage was 24·8; in the next seven years, 90·8; and for the whole ten years, 138·2. With regard to the amounts per head of population, the following statement shows the position at the various dates mentioned above:—

Period.	Increase of Revenue per head.	Increase of Expenditure per head.
1911 to 1914	17·8 per cent.	10·7 per cent.
1914 to 1921	63·1 "	68·7 "
1911 to 1921	92·1 "	86·8 "

*Heads of Revenue and Expenditure.*

The following table shows the details of revenue and expenditure during the last five financial years. The revenue and expenditure in 1920-21 were the largest recorded for the State, and the principal increases in each case occurred in the business undertakings. The excess of expenditure was £445,496, largely caused by unforeseen obligations which had to be met, viz.:— increased expenditure on railways, tramways, and other public works, due to the higher basic wage fixed by the Board of Trade; carriage of fodder for starving stock; losses on business and industrial undertakings; contributions to superannuation funds; relief to unemployed, and other items:—

	1917.	1918.	1919.	1920.	1921.
<b>REVENUE.</b>					
<i>Governmental.</i>					
Revenue Returned by Commonwealth .. .. .	£ 2,286,913	£ 2,317,783	£ 2,380,139	£ 2,472,717	£ 2,533,254
State Taxation .. .. .	3,629,404	3,860,501	4,083,990	4,962,518	7,888,183
Land Revenue—					
Alienation .. .. .	972,657	1,068,676	1,049,674	1,115,399	1,235,951
Occupation and Miscellaneous .. .. .	758,615	759,297	778,733	800,040	915,514
Total Land Revenue .. .. .	£ 1,731,272	£ 1,827,973	£ 1,828,407	£ 1,915,439	£ 2,151,465
Services Rendered .. .. .	417,345	406,490	446,837	543,278	748,291
General Miscellaneous .. .. .	550,008	519,016	632,039	683,140	695,324
Industrial Undertakings .. .. .	12,710	12,348	11,581	12,506	12,004
Advances Repaid .. .. .	26,101	143,396	28,906	95,856	40,082
Total Governmental .. .. .	£ 8,653,753	£ 9,087,507	£ 9,411,899	£ 10,685,453	£ 13,568,535
<i>Business Undertakings.</i>					
Railways and Tramways .. .. .	10,390,602	10,821,648	12,183,026	15,997,584	18,047,389
Sydney Harbour Trust .. .. .	511,981	576,459	618,901	653,513	797,211
Water Supply and Sewerage .. .. .	965,761	1,058,128	1,234,340	1,309,146	1,618,261
Total Business Undertakings .. .. .	£ 11,868,344	£ 12,456,235	£ 14,036,267	£ 17,965,043	£ 20,462,861
Grand Total .. .. .	£ 20,522,097	£ 21,543,742	£ 23,448,166	£ 28,650,496	£ 34,031,396
<b>EXPENDITURE.</b>					
<i>Governmental.</i>					
Interest on Public Debt and Special Deposits .. .. .	1,004,193	1,089,728	975,352	1,074,896	1,637,586
Reduction of Public Debt .. .. .	6,868	6,819	6,832	6,976	2,568
Transfer to Public Works Fund .. .. .	328,042	369,781	369,769	402,888	451,561
Departments—					
Premier .. .. .	132,923	92,893	92,578	139,076	119,480
Chief Secretary .. .. .	1,504,012	819,100	829,090	1,157,293	1,359,375
Public Health .. .. .	.. .. .	732,246	802,250	954,957	1,258,919
Treasurer (excluding Business Undertakings and Interest on Deposits, &c.) .. .. .	711,420	827,019	808,294	1,711,092	1,158,869
Attorney-General and Justice .. .. .	423,303	419,957	434,334	467,808	576,324
Lands .. .. .	584,854	384,959	386,348	534,700	580,949
Public Works (excluding Business Undertakings) .. .. .	459,035	429,393	427,500	515,862	635,128
Public Instruction (excluding Endowments) .. .. .	1,983,777	2,090,610	2,271,257	2,505,488	3,702,721
Labour and Industry .. .. .	55,156	46,076	63,022	91,524	102,287
Mines .. .. .	62,425	61,744	62,745	73,421	72,069
Agriculture .. .. .	249,244	295,791	254,809	304,752	450,788
Local Government—					
Administration .. .. .	29,612	29,002	27,490	24,133	37,641
Endowments and Grants .. .. .	308,336	325,145	332,664	324,917	347,869
All Other Services .. .. .	508,945	544,216	558,463	917,216	1,073,694
Transfers to Public Works Fund .. .. .	235,000	250,000	200,000	200,000	200,000
Advances made .. .. .	159,688	170,856	306,474	703,508	247,746
Total Governmental .. .. .	£ 8,546,534	£ 8,985,425	£ 9,219,299	£ 12,100,002	£ 14,014,452
<i>Business Undertakings (Working Expenses and Interest).</i>					
Railways and Tramways .. .. .	10,794,693	10,960,924	12,370,545	16,158,569	18,295,086
Sydney Harbour Trust .. .. .	464,565	499,156	510,735	583,245	645,801
Water Supply and Sewerage .. .. .	984,803	1,065,413	1,182,769	1,368,197	1,521,554
Total Business Undertakings .. .. .	£ 12,244,061	£ 12,534,493	£ 14,014,099	£ 18,110,011	£ 20,462,440
Grand Total .. .. .	£ 20,790,895	£ 21,519,918	£ 23,233,398	£ 30,210,013	£ 34,476,892

\* Includes Department of Public Health.

From the foregoing figures the following rates per head of population have been determined:—

	1917.	1918.	1919.	1920.	1921.
<b>REVENUE.</b>					
<i>Governmental.</i>					
Revenue Returned by Commonwealth.. ..	£ s. d. 1 4 2	£ s. d. 1 4 1	£ s. d. 1 4 3	£ s. d. 1 4 3	£ s. d. 1 4 3
State Taxation .. .. .	1 18 4	2 0 2	2 1 7	2 8 8	3 10 9
Land Revenue—					
Alienation .. .. .	0 10 3	0 11 1	0 10 8	0 11 0	0 11 10
Occupation and Miscellaneous .. .. .	0 8 0	0 7 11	0 7 10	0 7 10	0 8 9
Total .. .. .	£ 0 18 3	0 19 0	0 18 6	0 18 10	1 0 7
Services Rendered .. .. .	0 4 5	0 4 3	0 4 7	0 5 4	0 7 2
General Miscellaneous .. .. .	0 5 9	0 5 5	0 6 5	0 6 9	0 6 8
Industrial Undertakings .. .. .	0 0 2	0 0 1	0 0 1	0 0 1	0 0 1
Advances Repaid .. .. .	0 0 3	0 1 6	0 0 4	0 0 11	0 0 4
Total Governmental .. .. .	£ 4 11 4	4 14 6	4 15 9	5 4 10	6 9 10
<i>Business Undertakings.</i>					
Railways and Tramways .. .. .	5 9 9	5 12 6	6 3 11	7 17 0	8 12 9
Sydney Harbour Trust .. .. .	0 5 5	0 6 0	0 6 4	0 6 6	0 7 7
Water Supply and Sewerage .. .. .	0 10 2	0 11 0	0 12 6	0 12 10	0 15 6
Total Business Undertakings .. .. .	£ 6 5 4	6 9 6	7 2 9	8 16 4	9 15 10
Grand Total .. .. .	£ 10 16 8	11 4 0	11 18 6	14 1 2	16 5 8
<b>EXPENDITURE.</b>					
<i>Governmental.</i>					
Interest on Public Debt and Special Deposits .. .. .	0 10 7	0 11 4	0 9 11	0 10 6	0 15 8
Reduction of Public Debt .. .. .	0 0 1	0 0 1	0 0 1	0 0 1	.....
Transfer to Public Works Fund .. .. .	0 8 6	0 3 13	0 3 9	0 3 11	0 4 4
Departments—					
Premier .. .. .	0 1 5	0 1 0	0 0 11	0 1 4	0 1 2
Chief Secretary .. .. .	0 15 10*	0 9 7	0 8 5	0 11 4	0 13 0
Public Health .. .. .	..	0 7 8	0 8 2	0 9 5	0 12 1
Treasurer (excluding Business Undertakings and Interest on Deposits, &c.) .. .. .	0 7 6	0 8 8	0 8 3	0 16 10	0 11 1
Attorney-General and Justice .. .. .	0 4 6	0 4 5	0 4 5	0 4 7	0 5 6
Lands .. .. .	0 4 1	0 4 0	0 4 0	0 5 2	0 5 7
Public Works (excluding Business Undertakings) .. .. .	0 4 10	0 4 6	0 4 4	0 5 1	0 6 1
Public Instruction (excluding Endowments) .. .. .	1 0 11	1 1 4	1 3 1	1 4 7	1 15 5
Labour and Industry .. .. .	0 0 7	0 0 6	0 0 8	0 0 11	0 1 0
Mines .. .. .	0 0 8	0 0 8	0 0 8	0 0 9	0 0 8
Agriculture .. .. .	0 2 8	0 3 1	0 2 7	0 3 0	0 4 4
Local Government—					
Administration .. .. .	0 0 4	0 0 4	0 0 4	0 0 3	0 0 4
Endowments and Grants .. .. .	0 3 3	0 3 5	0 3 5	0 3 2	0 3 4
All Other Services .. .. .	0 5 4	0 4 8	0 5 3	0 9 0	0 10 3
Transfers to Public Works Fund .. .. .	0 2 6	0 2 7	0 2 0	0 2 0	0 1 11
Advances made .. .. .	0 1 8	0 1 9	0 3 2	0 6 11	0 2 5
Total Governmental .. .. .	£ 4 10 3	4 13 5	4 13 10	5 18 10	6 14 2
<i>Business Undertakings. (Working Expenses and Interest).</i>					
Railways and Tramways .. .. .	5 14 0	5 14 1	6 5 10	7 18 6	8 15 1
Sydney Harbour Trust .. .. .	0 4 11	0 5 3	0 5 3	0 5 9	0 6 2
Water Supply and Sewerage .. .. .	0 10 5	0 11 0	0 11 5	0 13 5	0 14 7
Total Business Undertakings .. .. .	£ 6 9 4	6 10 4	7 2 6	8 17 8	9 15 10
Grand Total .. .. .	£ 10 19 7	11 3 9	11 16 4	14 16 6	16 10 0

\* Includes Department of Public Health.

### CLOSER SETTLEMENT ACCOUNT.

The Closer Settlement Account was established under Act No. 1 of 1906. It is not included in the operations of the Consolidated Revenue Fund, although grants from that fund have formed a considerable portion of its receipts. As its name implies, the moneys of the fund are devoted to the promotion of closer settlement.

The following statement shows the net receipts and expenditure during the financial year ended the 30th June, 1921:—

RECEIPTS.				£	£
Balance brought forward from previous year ... ..	...	...	...		84,282
Assurance Fees—Real Property Act ... ..	...	...	...	17,006	
Repayments by Settlers ... ..	...	...	...	312,263	
Repayments on account of Improvement Leases ... ..	...	...	...	9,339	
					338,608
Transfer from General Loan Account ... ..	...	...	...		2,758,003
					<u>£3,180,890</u>
EXPENDITURE.					
Under Real Property Act ... ..	...	...	...	185	
Purchase of Estates, including Contingent Expenses ... ..	...	...	...	2,062,926	
Interest on Loans (Recoup to Consolidated Revenue) ... ..	...	...	...	172,037	
„ Closer Settlement Debentures ... ..	...	...	...	184,294	
„ Purchase Money ... ..	...	...	...	427	
					2,419,869
Repayment of Ministerial Certificates ... ..	...	...	...		800
Redemption of Debentures ... ..	...	...	...		178,500
Balance, 30th June, 1921 ... ..	...	...	...		581,721
					<u>£3,180,890</u>

During the period of fifteen years ended 30th June, 1921, 1,313 estates were purchased for closer settlement, exclusive of improvement leases, etc., resumed under Act 74 of 1912, the total area being 2,811,908 acres. The expenditure was as follows:—Purchase money, £10,348,870; contingent expenses, £130,124; total, £10,478,994.

#### PUBLIC WORKS ACCOUNT.

The Public Works Account, like the Closer Settlement Account, does not form part of the Consolidated Revenue Fund. It was opened in the year 1906, under the authority of the same statute which provided for the Closer Settlement Fund, and it receives two-thirds of the net proceeds of the sales of Crown lands, less 20 per cent., credited to the Consolidated Revenue Fund; the proceeds of land sales under the Public Instruction Act, 1880; and amounts voted from the Consolidated Revenue. Its moneys, like loan proceeds, may be applied in the construction or equipment of public works, but not to the repair or upkeep of such works. The net transactions during the year ended the 30th June, 1921, are shown herewith.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
Two-thirds of Net Proceeds of Sale of Crown Lands, exclusive of Interest on Purchase Money—less 20 per cent. (Act No. 9, 1906) .. ..	451,561	State Business Undertakings— Railways and Tramways .. ..	5,447
Net Proceeds of Sale of Land, under Section 4, Public Instruction Act of 1880 .. ..	1,265	Metropolitan Water and Sewerage ..	18,214
Transfers from Consolidated Revenue Account .. ..	200,000	Hunter District Water and Sewerage ..	261
Net Repayments on account of previous years .. ..	144	Sydney Harbour Trust .. ..	20,088
	652,970		43,950
		Observatory Hill Resumed area .. ..	5,111
		Water and Drainage Trusts .. ..	1,656
		Country Towns Water Supply .. ..	248
		Public Buildings and Silos .. ..	478,476
		Roads and Bridges .. ..	155,272
		Harbours and Rivers Navigation .. ..	34,576
			670,228
			719,239
Balance, 30th June, 1920, brought forward .. ..	350,401	Balance, 30th June, 1921 .. ..	284,082
Grand Total .. ..	£ 1,003,371	Grand Total .. ..	1,003,371

## EXPENDITURE ON PUBLIC WORKS.

The total expenditure on Public Works during each of the last five years is shown in the following table, which distinguishes the amount disbursed from the Public Works Fund, from the Consolidated Revenue Fund, and from Loans. The amounts shown as expended from the Loans and Public Works Funds are exclusive of repayments of votes for previous years; and transfers from the Consolidated Revenue to the Public Works Fund are not included in the expenditure of the former fund.

Year ended 30th June.	Public Works Fund. (Net.)	Consolidated Revenue Fund.	Loans. (Net.)	Total Expenditure.	Per Inhabitant.
	£	£	£	£	£ s. d.
1917	623,447	570,652	6,862,179	8,056,278	4 5 1
1918	532,676	576,456	4,487,511	5,596,643	2 18 2
1919	493,292	562,164	3,918,887	4,974,343	2 10 7
1920	532,099	638,166	8,794,905	9,965,170	4 17 10
1921	719,145	731,227	14,701,028	16,151,400	7 14 7

## GENERAL ACCOUNT.

Summarising the foregoing accounts, and adding the transactions on account of loans, the receipts by the State during the year ended 30th June, 1921, amounted to £50,147,027, and the expenditure to £53,525,559.

The aggregate receipts and expenditure during each of the last five years, after necessary adjustments, were as follow:—

## RECEIPTS.

Account.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	£	£	£	£	£
Consolidated Revenue ...	20,522,097	21,543,742	23,448,166	28,650,496	34,031,396
Closer Settlement ...	124,699	161,484	164,809	1,225,183	3,096,608
Public Works ...	564,854	623,162	570,573	604,082	652,970
Railways Loan ...	170,357	...	...	1,559,656	...
General Loan ...	8,305,259	6,712,777	15,453,503	20,623,164	12,366,053
Total ...	29,687,266	29,041,165	39,636,551	52,662,581	50,147,027

## EXPENDITURE.

	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	£	£	£	£	£
Consolidated Revenue ...	20,790,895	21,519,918	23,233,398	30,210,013	34,476,892
Closer Settlement ...	45,304	75,279	263,183	1,224,985	2,419,869
Public Works ...	623,447	532,676	493,292	572,265	719,289
Railways Loan ...	752,635	397,550	194,666	44,042	...
General Loan ...	6,150,845	4,193,033	3,735,914	8,761,223	14,734,389
Repayment of Loans ...	1,467,083	10,767	12,813,724	16,799,068	1,175,120
Total ...	29,830,209	26,729,223	40,734,177	57,611,596	53,525,559

The results shown above are exclusive of the transactions of the Special Deposits and Suspense Accounts; including these, the total receipts of all funds controlled by the Treasurer during 1920-21, were £74,310,486, and the expenditure £73,658,244.

The Audit Act provides that the Treasurer may arrange with any bank for the transaction of the general banking business of the State. The accounts are kept under the several headings detailed on the following page, and all amounts paid into any of the accounts mentioned are deemed to be "public moneys," and for interest purposes the several accounts are treated as one. The special accounts, which consist of "Supreme Court Moneys," are not controlled by the Audit Act, as they are operated on directly by the officers in charge of the Departments concerned.

The position of the General Account on the 30th June, 1921, is shown below.

Head of Account.	Ledger Balances on 30th June, 1921.		
	Invested in Securities.	Cash Balances.	Total.
<b>Credit Balances—</b>	£	£	£
<b>Special Deposits Account—</b>			
Government Savings Bank Deposits Account .. ..	..	3,147,500	3,147,500
"          "    Advances Deposit Account .. ..	..	500,000	500,000
State Debt Commissioners' Trust Accounts .. ..	..	168,916	168,916
"          "    Deposit Account .. ..	..	142,563	142,563
Compensation—Liquor Amendment Act .. ..	..	244,656	244,656
Sydney Municipal Council Sinking Funds .. ..	..	27,493	27,493
Industrial Undertakings and Housing Fund .. ..	..	181,568	181,568
Commonwealth Government Advances—			
Returned Soldiers .. ..	..	6,256,983	6,256,983
Wheat Storage .. ..	..	250,000	250,000
Broken Hill Water Supply Administration .. ..	..	219,409	219,409
Treasury Fire Insurance Fund .. ..	29,000	159,035	188,035
Other .. ..	133,140	1,073,389	1,206,529
<b>Total Special Deposits Account.. Cr. £</b>	162,140	12,371,512	12,533,652
<b>Closer Settlement Account .. ..</b>	..	581,721	581,721
<b>Public Works Account .. ..</b>	..	284,082	284,082
<b>Special Accounts—</b>			
Colonial Treasurer's Supreme Court Moneys .. ..	..	564,204	564,204
Miners' Accident Relief Account .. ..	233,500	..	233,500
London Remittance Account .. ..	..	2,156,322	2,156,322
<b>Total .. .. Cr. £</b>	395,640	15,957,841	16,353,481
<b>Less Debit Balances—</b>	£		
Consolidated Revenue Account.. .. 2,249,558			
General Loan Account .. .. 8,647,539			
Loans Expenditure Suspense Account .. 658,057			
Public Works Expenditure Suspense Account 41,995			
Railway Store Suspense Account .. .. 183,953	..	12,086,846	12,086,846
<b>Government Dockyard—</b>			
Stores Advance Account .. .. 15,900			
Coal Purchase Suspense Account .. .. 190,744			
<b>Government Printer—</b>			
Stores Advance Account .. .. 100,000			
<b>Net Credit Balance .. .. Cr.</b>	395,640	3,870,995	4,266,635
<b>Deduct—Amounts not transferred to Public Accounts.. Dr.</b>	..	1,044,120	1,044,120
<b>Net Credit Balance in Sydney .. .. Cr.</b>	395,640	2,826,875	3,222,515
<b>Deduct—London Account .. .. Dr.</b>	..	2,156,322	2,156,322
<b>Net Balance .. .. Cr.</b>	395,640	670,553	1,066,193

The cash balance on the 30th June, 1921, was £670,553, distributed as follows:—

	£
Sydney—Net Credit .. ..	2,826,875
London—Net Debit .. ..	2,156,322
	£670,553

## TAXATION.

Land and Income Taxes, Stamp and Probate Duties, Motor Taxes, Totalisator and Betting Taxes, Racecourse Admission Tax, and License Fees, represent the various forms of State taxation, and they yielded a revenue of £7,388,133 during the year ended 30th June, 1921. In addition, the Commonwealth Government collected in this State taxes amounting to £22,777,003, and receipts by local bodies from rates and charges were £5,411,868.

The following statement shows in detail the taxation collected in New South Wales by the Commonwealth and State Governments, and the rates and charges received by local bodies, &c., during the five years ended the 30th June, 1921. The figures for municipal and shire rates relate to the year ending on the 31st December preceding the close of the financial year in which they are included.

Head of Taxation, or Charge.	1917.	1918.	1919.	1920.	1921.
<b>COMMONWEALTH.</b>					
	£	£	£	£	£
Customs Duties ... ..	5,705,757	4,682,456	5,398,654	6,604,913	9,797,982
Excise „ ... ..	1,718,516	1,934,809	2,841,047	4,015,417	5,027,497
Probate and Succession Duties ... ..	606,311	388,095	310,454	452,972	409,317
Land Tax ... ..	*950,000	*1,094,222	*1,036,974	1,162,460	1,144,174
Income Tax ... ..	†2,239,206	†2,969,932	†4,430,035	†5,245,497	†5,280,977
War-time Profits Tax ...	...	†148,250	†467,040	†1,293,840	†844,425
Entertainment Tax ...	50,096	102,195	136,892	234,615	272,631
Total, Commonwealth Taxation ... £	11,269,886	11,319,959	14,621,096	19,009,714	22,777,003
<b>STATE.</b>					
Land Tax ... ..	3,215	2,921	2,800	2,834	2,717
Income Tax ... ..	1,973,477	2,182,117	2,355,243	2,308,267	4,399,360
Stamp and Probate Duties.					
Stamps ... ..	507,646	557,233	631,007	889,512	1,316,671
Bank-note Composition..	1,716	1,556	1,456	1,327	1,461
Betting Tickets... ..	40,849	57,391	54,841	87,504	96,336
Probate ... ..	814,813	673,711	574,950	1,061,574	727,716
Settlement and Companies' Death Duties ...	11,956	3,722	925	959	6,636
Total, Stamp Duties £	1,376,980	1,293,613	1,263,179	2,040,876	2,148,820
Motor Tax ... ..	67,044	79,169	90,716	110,390	123,590
Betting Taxes ... ..	47,536	59,359	72,290	93,726	108,911
Totalisator Tax ... ..	6,346	82,802	132,403	222,970	274,171
Racecourse Admission Tax	...	...	...	...	117,820
Licenses ... ..	154,806	160,520	167,359	163,455	212,744
Total, State Taxation ... £	3,629,404	3,860,501	4,083,990	4,962,518	7,388,133
<b>LOCAL.</b>					
Wharfage and Tonnage Rates ... ..	290,454	316,186	365,033	355,784	651,377
Fees for Registration of Dogs ... ..	16,692	17,114	18,311	17,678	19,137
Municipal Rates—					
City of Sydney ... ..	525,648	455,040	465,988	564,747	623,766
Suburban and Country Municipalities ...	1,118,214	1,186,417	1,241,178	1,327,351	1,630,518
Shire Rates ... ..	651,437	691,593	729,966	763,356	868,809
Water and Sewerage Rates —(Metropolitan and Hunter) ... ..	965,761	1,058,128	1,234,340	1,309,146	1,618,261
Total, Local Rates and Charges £	3,568,206	3,724,478	4,054,816	4,338,062	5,411,868
Grand Total ... £	18,467,496	18,904,938	22,759,902	28,310,294	35,577,004

\* Estimated.

† Partly estimated.



*Taxation per Inhabitant.*

The previous quotations, stated in their equivalent rates per head of population, are shown in the following table:—

Head of Taxation, or Charge.	1917.	1918.	1919.	1920.	1921.
<b>COMMONWEALTH.</b>					
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Customs Duties ... ..	3 0 3	2 8 8	2 14 11	3 4 10	4 13 9
Excise " ... ..	0 18 2	1 0 1	1 8 11	1 19 5	2 8 2
Probate Duties ... ..	0 6 5	0 4 1	0 3 1	0 4 5	0 3 11
Land Tax ... ..	0 10 0	0 11 4	0 10 7	0 11 5	0 10 11
Income Tax ... ..	1 3 8	1 10 11	2 5 1	2 11 6	2 10 7
War-time Profits Tax ... ..	...	0 1 6	0 4 9	0 12 8	0 8 1
Entertainment Tax ... ..	0 0 6	0 1 1	0 1 5	0 2 4	0 2 7
Total, Commonwealth Taxation ... £	5 19 0	5 17 8	7 8 9	9 6 7	10 18 0
<b>STATE.</b>					
Land Tax ... ..	...	...	...	...	...
Income Tax ... ..	1 0 10	1 2 8	1 4 0	1 2 8	2 2 1
Stamp and Probate Duties—					
Stamps ... ..	0 5 4	0 5 10	0 6 5	0 8 9	0 12 7
Bank-note Composition ... ..	...	...	...	...	...
Betting Tickets ... ..	0 0 6	0 0 7	0 0 7	0 0 10	0 0 11
Probate ... ..	0 8 7	0 7 0	0 5 10	0 10 5	0 7 0
Settlement and Companies' Death Duties ... ..	0 0 1	...	...	...	0 0 1
Total, Stamp Duties £	0 14 6	0 13 5	0 12 10	1 0 0	1 0 7
Motor Tax ... ..	0 0 9	0 0 10	0 0 11	0 1 1	0 1 2
Betting Taxes ... ..	0 0 6	0 0 7	0 0 9	0 0 11	0 1 1
Totalizator Tax ... ..	...	0 0 11	0 1 4	0 2 2	0 2 8
Racecourse Admission Tax ... ..	...	...	...	...	0 1 2
Licenses ... ..	0 1 9	0 1 9	0 1 8	0 1 10	0 2 0
Total, State Taxation £	1 18 4	2 0 2	2 1 6	2 8 8	3 10 9
<b>LOCAL.</b>					
Wharfage and Tonnage Rates ...	0 3 1	0 3 4	0 3 8	0 3 6	0 6 3
Fees for Registration of Dogs ...	0 0 2	0 0 2	0 0 2	0 0 2	0 0 2
Municipal Rates—					
City of Sydney ... ..	0 5 8	0 4 9	0 4 9	0 5 7	0 5 11
Suburban and Country Municipalities ... ..	0 11 7	0 12 4	0 12 8	0 13 0	0 15 7
Shire Rates ... ..	0 7 0	0 7 2	0 7 5	0 7 6	0 8 4
Water and Sewerage Rates— (Metropolitan and Hunter) ...	0 10 2	0 11 0	0 12 7	0 12 10	0 15 6
Total, Local Rates and Charges ... .. £	1 17 8	1 18 9	2 1 3	2 2 7	2 11 9
Grand Total £	9 15 0	9 16 7	11 11 6	13 17 10	17 0 6

Particulars of income from taxation in the other States, and also for the Commonwealth, will be found on page 224.

*State Land Tax.*

The land tax of the State is levied on the unimproved value at the rate of 1d. in the £. A sum of £240 is allowed by way of exemption, and where the unimproved value is in excess of that sum, a reduction equal to the exemption is made; but where several blocks of land within the State are held by a person or company, only one amount of £240 may be deducted from the aggregate unimproved value.

Since 1906 the Local Government Act has provided that when the council of a shire or municipality levies a general rate not less than 1d. in the £ on the unimproved value, the land tax ceases to be collected by the State Government. A similar provision was extended to the City of Sydney under the operation of the Sydney Corporation (Amendment) Act, 1908. The State land tax is now levied, therefore, only on the unincorporated portion of the Western Division.

*State Income Tax.*

The former Acts relating to income tax were amended by the Income Tax Act, 1911. Under its provisions a tax became payable by all persons, other than companies, in receipt of £300 per annum, derived from all sources within New South Wales, and in the case of companies the total receipts became taxable. Amending Acts passed in 1914 and 1920 imposed further increases, the exemption being reduced in 1914 to £250, with no deduction for companies. A taxpayer is entitled to a deduction of £50 in respect of each child under 18 years of age wholly maintained by him, and insurance and superannuation premiums up to £50 are exempt. From 1915 to 1919 a super-tax of 3d. in the £ was levied, and this was increased to 6d. in 1920.

The tax payable under the Act of 1920 by any company is 2s. in the £ on the taxable income of the company without exemption, and the rates per £ for persons other than companies are as follows:—

On taxable income which does not exceed £700	...	...	9d.	} Plus super- tax 6d.
" " " exceeds £700 and does not exceed £1,700	...	£1,700...	10d.	
" " " " £1,700	"	£2,700...	1s.	
" " " " £2,700	"	£4,700...	1s. 2d.	
" " " " £4,700	"	£6,700...	1s. 5d.	
" " " " £6,700	"	£9,700...	1s. 9d.	
" " " " £9,700	...	...	2s.	

In each case an addition of one-third of the tax is made on so much of the income as is derived from the produce of property.

The exemptions from income-tax are as follow:—

Municipal corporations and other local authorities.

Mutual life assurance societies, and other companies or societies not carrying on business for purposes of profit or gain, except income from mortgages.

Societies registered under the Friendly Societies Act, or under any Act relating to Trade Unions.

Ecclesiastical, Charitable, and Educational Institutions of a public character, whether supported wholly or partly by grants from the Consolidated Revenue Fund or not.

Income arising or accruing to any person from Government debentures, inscribed stock, and treasury bills.

Dividends derived from shares in a company.

Star-Bowkett Building Societies.

These exemptions do not extend to the salaries and wages of persons employed by any such corporation, company, society, or institution, whether paid wholly or in part from the revenues thereof.

*Revenue from State Land and Income Taxes.*

The revenue from land and income taxes since 1896, the year in which they were first imposed, is shown herewith. The amounts exclude refunds rendered necessary through correction of errors by the taxpayer, or through adjustments by the Department, but they include refunds brought about through the income of the year of assessment falling short of the amount of the income of the preceding year on which the assessment was made.

Year.	Land Tax.	Income Tax.		Year.	Land Tax.	Income Tax.	
		Amount.	Per head.			Amount.	Per head.
	£	£	£ s. d.		£	£	£ s. d.
1896	...	27,658	0 0 5	1909	80,794	202,369	0 2 7
1897	139,079	295,537	0 4 7	1910	9,066	219,977	0 2 9
1898	364,131	166,395	0 2 6	1911	7,438	269,142	0 3 3
1899	253,901	178,032	0 2 8	1912	6,479	644,571	0 7 10
1900	286,227	183,460	0 2 9	1913	5,738	662,625	0 7 9
1901	288,369	215,893	0 3 2	1914	4,692	1,290,370	0 14 0
1902	301,981	203,625	0 2 11	1915	3,346	1,653,923	0 17 7
1903	314,104	214,686	0 3 1	1916	3,190	1,707,403	0 18 1
1904	322,246	193,240	0 2 8	1917	3,215	1,973,477	1 0 10
1905	323,267	195,252	0 2 8	1918	2,921	2,182,117	1 2 8
1906	329,998	266,233	0 3 7	1919	2,800	2,355,243	1 4 0
1907	345,497	283,422	0 3 9	1920	2,834	2,308,267	1 2 8
1908	178,889	215,283	0 2 10	1921	2,717	4,399,360	2 2 1

The fluctuations shown in the first three years are due to the difficulties inseparable from the introduction of a system of direct taxation; the returns for 1899 and subsequent years, however, are under normal conditions, which have varied according to the rates imposed in the case of the income tax, and by the transfer of the land tax to shires and municipalities.

*State Stamp and Probate Duties.*

In the year 1914 additional Stamp and Probate Duties were imposed, and from the 1st January, 1921, the charges were further increased under the Stamp Duties Act of 1920. The rates payable on estates of deceased persons under the 1920 Act are as follow:—

Under £1,000—Exempt.

£1,000 and under £5,000—2 per cent.	
£5,000 „ £10,000—2½ to 4½ per cent.	Increase = ½ per cent. per £1,000.
£10,000 „ £20,000—5 to 7 „	Increase = ½ „ „ £2,000.
£20,000 „ £140,000—7½ to 19 „	Increase = ½ „ „ £5,000.
£140,000 „ £150,000—19½ „	
Exceeding £150,000—20 per cent.	

Half rates are allowed on estates under £5,000 when the property passes to widows, or to children under 21 years of age.

*State Motor Tax.*

Motor vehicles must be registered annually with the Police Department, and on such registration a fee fixed at a minimum of £1 is payable in respect of a motor cycle, motor tricycle, or taxi-cab. On other motor vehicles the license fee ranges between £2 and £20, and the basis upon which it is payable is the "horse-power" of the vehicle. Motor cars used by medical practitioners or clergymen, public motor cars (except taxi-cabs), and trade motor vehicles pay half-rates. Government and ambulance motor vehicles, and those owned by municipalities and shires, or by the City of Sydney, are

exempt from taxation. The total number of motor vehicles licensed, including motor cycles, was 40,907, and the revenue benefited by the tax during 1920-21 to the extent of £123,590.

#### *State Betting Taxes.*

The Finance (Taxation) Act, 1915, and amending Acts, imposed taxes on racing clubs and associations, on bookmakers, and on betting tickets.

With regard to the clubs, the taxes are levied on licenses and fees received from bookmakers. The existing rates range from 50 per cent. on racecourses within 40 miles of the General Post Office, Sydney, or 20 miles from the Post Office, Newcastle, to 20 per cent. on courses outside the limits mentioned.

The taxes payable by bookmakers are regulated according to the particular courses and enclosures where operations are carried on, and vary considerably. The total amount received during the year ended 30th June, 1921, from the betting taxes, was £108,911.

The Act of 1915 further provided for the imposition of a stamp duty on all betting tickets issued by bookmakers, the amount being one penny in the saddling paddock, and one half-penny for the other parts of the racecourse. During 1917 these rates were doubled, and in 1920 the amount on the paddock tickets was increased to threepence, but the other rates were not altered. In addition to these amounts, bookmakers are required to furnish a monthly statement showing the number of credit bets made, the duty on which is the same as if tickets had been issued. The revenue derived from this source during the year ended the 30th June, 1921, was £96,336.

#### *State Totalizator Tax.*

The Totalizator Act (No. 75, 1916) was passed on the 20th December, 1916, and was amended by Acts No. 29, 1919, and No. 16, 1920. The revenue derived from this source for the first six months during which it was in operation was only £6,346, but the return for the year 1920-21 amounted to £274,171.

All registered racing clubs and associations must establish an approved totalizator. The commission to be deducted from the total amount invested is  $12\frac{1}{2}$  per cent., with an additional 1 per cent. for a sinking fund to meet the cost of machines. The contribution which must be paid to the State Treasurer by clubs racing for profit is 9 per cent. of the total payments into the machine and by other clubs  $5\frac{1}{2}$  per cent.

#### *State Racecourse Admission Tax.*

An Act enabling the Government to levy a tax on persons entering racecourses, came into operation on the 1st October, 1920, and an amending Act was passed on the 31st December, 1920. The Acts apply to all racecourses within 40 miles of the General Post Office, Sydney, and a similar distance from the Newcastle Post Office. The amounts leviable are:—Twopence on the admission charge through the outside gate or into the flat, 10d. into the Leger Reserve, while into the Saddling Paddock the rate is 3s. for males, 2d. additional being charged at Randwick, and 1s. 7d. for females. If no charge is made at the outside gate the tax for the Leger and Paddock enclosures is 2d. higher. Members and season ticket-holders are required to pay a tax equal to 40 per cent. on the amount of their annual subscriptions.

In order to carry out the provisions of this Act, racing clubs are compelled to furnish returns of the number of persons who paid for admission and the number of members and season ticket holders. The total amount received on account of this tax for the year ended 30th June, 1921, was £117,820.

*Commonwealth Land Tax.*

The first direct taxation by the Federal Government was imposed in 1910, when the Land Tax Act was passed, which levies a graduated tax on the unimproved value of the lands of the Commonwealth. In the case of owners who are not absentees, an amount of £5,000 is exempt, and the rate of tax is  $1\frac{1}{18750}$ d. for the first £1 of value in excess of that amount, and increases uniformly to 5d. in the £ on a taxable balance of £75,000, with 9d. in the £ for every £ in excess of that amount. Absentee owners are required to pay 1d. in the £ up to £5,000, with a uniform progression from  $2\frac{1}{18750}$ d. to 6d. for the next £75,000. On every £ in excess of £80,000, the rate payable is 10d., and amending legislation passed in 1918 imposed an additional tax of 20 per cent.

Lands exempt from taxation are those owned by a State, municipality, or other public authority, by savings banks, friendly societies, or trade unions, or such as are used solely for religious, charitable, or educational purposes.

The latest available statement issued by the Commonwealth Commissioner of Taxation shows that the land tax payable for New South Wales property by residents was £1,192,086; by absentees, £23,635; total, £1,215,721. For the whole Commonwealth the corresponding figures were:—Residents, £2,133,117; absentees, £55,106; total, £2,188,223.

*Commonwealth Income Tax.*

In addition to the taxation of incomes imposed by the State, the Commonwealth levies a tax which is payable by residents and absentees in respect of income derived from sources within Australia (which includes Papua).

The exemptions from taxation include the revenues and funds of local governing bodies or public authorities; friendly societies; trade unions and kindred associations; religious, scientific, charitable, or public educational institutions; and interest on certain Commonwealth war loan securities. The Act excludes persons on active service with the forces of Great Britain or of her Allies, as regards income derived from personal exertion, from the date of enlistment to the date of discharge.

Resident taxpayers who are unmarried and have no dependents are allowed an exemption of £104 less £1 for every £5 in excess of £100, and other resident taxpayers are allowed an exemption of £156 less £1 for every £3 by which the income exceeds £156. Absentees are assessed on their total incomes from all sources in Australia.

Special deductions include £26 for every child under 16 years of age maintained by a resident taxpayer; payments up to £50 for friendly society benefits, superannuation, &c.; and up to £50 for life assurance and fidelity guarantee; and gifts over £5 each to public charitable institutions or war relief funds.

The rate of taxation upon incomes derived from personal exertion is  $3\frac{3}{800}$ d. per pound sterling up to £7,600, increasing uniformly with each increase of one pound sterling of the taxable income by three eight-hundredths of one penny, until an average rate of 2s. 7½d. per pound is reached at £7,600. Over £7,600 the rate per pound sterling is 5s.

The rate of taxation upon incomes up to £546 derived from property, is stated by the following formula:—

$$R = \left( 3 + \frac{I}{181.058} \right) \text{pence,}$$

R, being the average rate of tax in pence per pound sterling, and I the taxable income in pounds sterling.

Over the sum of £546, and up to £2,000, the tax increases continuously with the increase of the taxable income till it reaches 33.6 pence per pound sterling on £2,000 10s., thence up to a rate of 5s. for every pound sterling

in excess of £6,500, and to the above rates are added additional imposts amounting to 70-625 per cent. of the original amount of the tax.

The minimum amount of tax payable by unmarried resident taxpayers having no dependents is £1.

Companies pay a flat rate of 2s. 8d. in the £ on such of the taxable incomes as have not been distributed to members or shareholders, and 8d. in the £ on dividends and interest paid to absentees.

Winners of prizes in lotteries pay a tax of 14 per cent.

#### *Commonwealth Estate Duties.*

The Estates Assessment Act (No. 22 of 1914) provided for the imposition of a duty on properties of persons who died after the commencement of the Act. The rates are 1 per cent. where the total value exceeds £1,000 but does not exceed £2,000, and an additional one-fifth per cent. for every thousand pounds, or part thereof, in excess of two thousand pounds, the maximum being 15 per cent.

A reduction of two-thirds of the above rates is allowed if the estate is left to the widow, children, or grandchildren of the testator.

Estates of persons who died on active service in the War, or as the result of injuries or diseases contracted while on active service, are exempt.

#### *Commonwealth Entertainments Tax.*

The Entertainments Tax is levied on payments for admission to almost every class of amusement at the rate of one half-penny for each sixpence or part thereof. Payments not exceeding 3d. for the admission, on Saturday afternoons, of children under 12 years of age are exempt.

#### *Commonwealth War-time Profits Tax.*

The Commonwealth War-time Profits Act, 1917, imposed a tax on profits above the pre-war standard, which was taken to be the average profits of any two of the last three pre-war trade years, or 10 per cent. on the capital employed in the business. The rate of tax on war-time profits arising during the year ended 30th June, 1916, was 50 per cent., and in each succeeding year up to 1919, when it ceased to be imposed, 75 per cent.

#### LAND REVENUE OF THE STATE.

The receipts from the sale and occupation of Crown lands are treated as public income. Although the proceeds from occupation, being rent, can be reasonably regarded as an item of revenue, the inclusion of the proceeds of auction, conditional purchase, and other classes of sale as ordinary revenue is open to serious objection. It has been urged in justification of this course that the sums so obtained have enabled the Government to construct works which enhance the value of the remaining public lands and facilitate settlement, and to endow local bodies, thus enabling them to carry out local improvements. Under the Act, passed in 1906, instituting the Public Works Fund, two-thirds of the net proceeds of the sale of Crown lands, less 20 per cent., equivalent to a clear 53½ per cent., are paid into the fund so created.

The revenue derived from lands may be grouped under three main heads—(a) auction sales and other forms of unconditional sale; (b) conditional sales under the system of deferred payments; (c) rents from pastoral, mining, and other classes of occupation. The receipts from each source in 1920-21 were £58,595, £1,191,166, and £699,732 respectively, while Miscellaneous Receipts amounted to £249,165, making a total of £2,198,658. Refunds amounting to £47,193 were made, leaving a net revenue of £2,151,465.

The land policy of the State, though largely connected with public finance, is discussed in that part of this volume which treats of Land Settlement.

## RECEIPTS FOR SERVICES RENDERED.

The net amount collected for services rendered by the State, other than for trading concerns, during the year ended 30th June, 1921, was £748,291. The principal sources of revenue were Pilotage, Harbour and Light Rates, &c., £205,306; Registrar-General, Fees, £163,055; Contributions for the Support of Patients in Mental Hospitals, £61,171; Supreme, District, and Petty Sessions Courts, &c., £96,104; support of children in Industrial Schools and inmates of Benevolent Asylums, &c., £29,701; and other Fees, &c., £192,954.

## GENERAL MISCELLANEOUS RECEIPTS.

All items which cannot be placed under one of the classes mentioned in the previous pages (Taxation, Land Revenue, and Receipts for Services Rendered) are grouped under the heading of "General Miscellaneous Receipts." The total in 1920-21 amounted to £695,324, the principal items being interest on value of properties transferred to the Commonwealth, £174,631; rents, £126,288; interest on advances under Country Towns Water Supply and Sewerage Act, £59,617; other interest, £101,056; and fines, forfeitures, &c., £44,648.

The balance of the revenue for the year ended 30th June, 1921, consisted of the amount returned by the Commonwealth, £2,533,234, and interest and contributions from Industrial Undertakings (Act No. 22, 1912), £12,005.

## EXPENSES OF GENERAL GOVERNMENT AND OF BUSINESS UNDERTAKINGS.

The following statement shows the expenditure classified under two headings—the ordinary expenditure of the General Government, including interest on the capital liability of the services connected therewith, and the expenditure on services practically outside the administration of General Government, including interest on their capital liability. The figures for the ten years ended the 30th June, 1921, and the rates per inhabitant, were as follow:—

Year ended 30th June.	Governmental.			Business Undertakings.				Grand Total Expenditure (Including Advances).
	General Services.	Interest and Redemptions.	Total.	Railways and Tramways.	Water Supply and Sewerage.	Sydney Harbour Trust.	Total.	
	£	£	£	£	£	£	£	£
1912	6,379,242	1,028,206	7,407,448	7,733,147	652,819	343,865	8,729,831	16,137,279
1913	6,879,802	1,066,528	7,946,330	8,754,490	688,843	389,237	9,832,570	17,778,900
1914	6,438,271	1,028,363	7,466,634	9,505,926	725,931	366,698	10,598,555	18,065,189
1915	6,830,162	977,123	7,807,285	9,540,159	785,300	383,435	10,708,894	18,516,179
1916	7,120,558	1,064,273	8,184,831	10,107,149	841,278	420,669	11,369,096	19,553,927
1917	7,535,774	1,011,060	8,546,834	10,794,693	984,803	464,565	12,244,061	20,790,895
1918	7,888,877	1,096,548	8,985,425	10,969,924	1,065,413	499,156	12,534,493	21,519,918
1919	8,237,115	982,184	9,219,299	12,370,545	1,132,769	510,785	14,014,099	23,233,398
1920	11,018,130	1,081,872	12,100,002	16,158,569	1,368,197	583,245	18,110,011	30,210,013
1921	12,374,300	1,640,152	14,014,452	18,295,085	1,521,554	645,801	20,462,440	34,476,892

## Expenditure per Inhabitant.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1912	3 17 10	0 12 7	4 10 5	4 14 5	0 8 0	0 4 2	5 6 7	9 17 0	
1913	4 0 10	0 12 6	4 13 4	5 2 11	0 8 1	0 4 7	5 15 7	10 8 11	
1914	3 9 8	0 11 2	4 0 10	5 2 11	0 7 10	0 4 0	5 14 9	9 15 7	
1915	3 12 6	0 10 5	4 2 11	5 1 3	0 8 4	0 4 1	5 13 8	9 16 7	
1916	3 15 2	0 11 3	4 6 5	5 6 9	0 8 11	0 4 5	6 0 1	10 6 6	
1917	3 19 7	0 10 8	4 10 3	5 14 0	0 10 5	0 4 11	6 9 4	10 19 7	
1918	4 2 0	0 11 5	4 13 5	5 14 1	0 11 0	0 5 3	6 10 4	11 3 9	
1919	4 3 10	0 10 0	4 13 10	6 5 10	0 11 5	0 5 3	7 2 6	11 16 4	
1920	5 8 3	0 10 7	5 18 10	7 18 6	0 13 5	0 5 9	8 17 8	14 16 6	
1921	5 18 6	0 15 8	6 14 2	8 15 1	0 14 7	0 6 2	9 15 10	16 10 0	

Under the head of general services are included public health, education, police, and all other civil and legal expenditure, also the cost of public works paid out of the ordinary revenue, transfers to Public Works Fund, advances, etc.

#### INDUSTRIAL UNDERTAKINGS OF THE STATE.

In addition to the business undertakings, viz., Railways, Tramways, Harbour Trust, Water Supply and Sewerage, and the national undertaking, the Murrumbidgee Irrigation Scheme, the State controls various industrial undertakings, the revenue and expenditure of which do not form part of the Consolidated Revenue Fund, but are included principally under the Special Deposits Fund.

The following table shows the transactions of these undertakings during the year ended 30th June, 1921, and the total capital expenditure at that date.

Service.	Total Capital as determined by Committee.	Revenue.	Expenditure.			Net Revenue.
			Working Expenses, including Rates and Taxes.	Interest, Sinking Fund, &c.	Total.	
<b>INDUSTRIAL UNDERTAKINGS—</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>
Bakery .. .. .	19,803	34,975	33,810	562	34,372	603
Blue Metal Quarries—Kiambs and Port Kembla .. .. .	123,004	180,188	173,050	5,350	178,400	1,788
Brickworks—Homebush Bay ..	92,471	132,650	112,484	10,551	123,035	9,615
Building Construction (including Maroubra Quarry) .. .. .	31,259	382,163	363,025	9,246	372,271	9,892
Clothing Factory .. .. .	13,408	77,818	72,900	655	73,554	4,254
Drug Depot .. .. .	188	39,608	37,471	9	37,480	2,128
Monier Pipe Works .. .. .	38,073	85,220	75,601	6,096	81,697	3,523
Motor Garage .. .. .	8,486	34,740	31,355	1,341	32,696	2,044
Power Station—Uhr's Point ..	32,492	5,750	6,398	1,643	8,041	(—) 2,291
Sawmills—Craven and Gloucester	57,436	70,261	67,229	2,744	69,973	288
Timber Yard, etc.—Uhr's Point	180,893	586,037	575,706	9,283	584,989	1,048
Trawlers .. .. .	195,055	115,090	107,520	7,500	115,026	64
<b>Total, Industrial Undertakings</b>	<b>792,568</b>	<b>1,744,500</b>	<b>1,656,564</b>	<b>54,980</b>	<b>1,711,544</b>	<b>32,956</b>
<b>OTHER SERVICES—</b>						
Housing Board .. .. .	923,574	39,364	3,091	35,236	38,327	1,037
Metropolitan Meat Industry ..	1,766,631	333,509	287,738	38,066	325,824	7,686
Observatory Hill, Resumed Area	1,338,464	77,098	23,289	64,693	87,982	(—) 10,884
<b>Total, Other Services .. .. .</b>	<b>4,028,669</b>	<b>449,971</b>	<b>314,118</b>	<b>138,015</b>	<b>452,133</b>	<b>(—) 2,162</b>
<b>Grand Total .. .. .</b>	<b>£ 4,821,237</b>	<b>2,194,471</b>	<b>1,970,682</b>	<b>192,995</b>	<b>2,163,677</b>	<b>30,794</b>

(—) Denotes net expenditure.

The figures for the Housing Board and the Observatory Hill Resumed Area are approximate, and will probably be altered when the detailed audit is completed.

As will be seen from the foregoing table, the undertakings have nearly all been carried on profitably, only two showing a loss for the year, and the net return on the capital outlay of £4,821,237 was £30,794, or 0.63 per cent. The largest deficiency occurred in connection with the Observatory Hill area, the expenditure on which exceeded the revenue by £10,884, representing a loss of 0.81 per cent. on the capital charge.



The principal profit-producing concerns were the Building Construction and Brickworks undertakings, and the other works connected with the building trades, viz., metal quarries, timber yards, monier pipes, and sawmills, were carried on profitably. The Clothing Factory also more than paid the charges for working expenses and interest, and the transactions of the Metropolitan Meat Industry resulted in a net return of £7,685, or 0.43 per cent. on capital after paying interest, while for the first time since its establishment the Trawling Industry shows a profit.

The operations of the Building Construction Branch, which now includes the Maroubra quarry, were very successful, showing a net profit of £9,892. The total receipts, including value of works completed and in progress, were £382,163, and the expenditure, including interest and sinking fund, &c., amounted to £372,271. The trading profit was £19,138, or 61.2 per cent. of capital, and the result is very satisfactory, especially as wages and materials were higher than in former years.

Brickworks also were carried on profitably, notwithstanding that the products were sold at prices 24 per cent. below those ruling in privately-controlled brickyards. The trading profit for the year 1920-21 was £20,166 (equal to 21.8 per cent. on capital employed), out of which a sum of £5,562 was paid as a bonus to employees, £2,329 as interest, £160 to sinking fund, and £2,500 to Special Reserve, leaving a balance of £9,615 to be carried forward.

The Newcastle Dockyard has not been proclaimed an industrial undertaking, and consequently does not appear in the table, as details regarding its operations are not available.

The Murrumbidgee Irrigation Area is of a national character, and has therefore been treated separately. The following table shows the transactions for the past six years, that is since the area was proclaimed an industrial undertaking:—

Year ended 30th June.	Capital Expenditure.	Revenue.	Expenditure.			Net Deficiency.	Proportion of net Deficiency to Capital Expenditure.
			Working Expenses.	Interest, Sinking Fund, &c.	Total.		
	£	£	£	£	£	£	per cent.
1916	3,417,813	30,202	37,986	129,616	167,602	137,400	4.02
1917	3,855,503	248,170	272,080	170,428	442,508	194,338	5.04
1918	4,116,941	225,297	240,442	194,153	434,595	209,298	5.08
1919	4,336,399	310,045	313,428	210,485	523,913	213,868	4.93
1920	5,290,692	354,851	403,502	235,916	639,418	284,567	5.38
1921	6,090,681	359,498	563,609	267,289	830,898	471,400	7.74

The revenue and working expenses shown are the gross amounts. For the year 1921 the net revenue was £92,512, and the net working expenses £133,369, resulting in a net trading loss of £40,857, which, added to the interest and sinking fund liability, £267,289, gives a total loss for the year of £308,146. The principal losses in the year 1921 occurred in the Yanco establishments, viz., Bacon Factory and Abattoirs, Dormitories and Dining Rooms, and Canning Factory, while the services which showed the largest profits were the dry areas at Yanco, and the butter factory.

The following table shows the transactions of the State industrial undertakings during the years 1912-21, excluding the business undertakings (Railways, &c.) and the Murrumbidgee Irrigation Area.

Year ended 30th June.	Capital Expenditure.	Revenue.	Expenditure.			Net Revenue.	Proportion of Net Revenue to Capital Expenditure.
			Working Expenses.	Interest, Sinking Fund, Depreciation, and Reserves.	Total.		
	£	£	£	£	£	£	per cent.
1912	1,249,413	71,309	38,686	40,213	78,899	(—) 7,590	(—) 0·60
1913	1,497,072	268,571	200,148	53,115	273,353	(—) 4,782	(—) 0·32
1914	1,688,090	591,644	521,680	72,008	593,688	(—) 2,044	(—) 0·12
1915	1,875,251	853,434	756,464	93,019	849,483	3,951	0·21
1916	2,905,985	1,049,212	902,663	143,479	1,046,142	3,070	0·10
1917	3,421,687	1,266,398	1,085,778	138,678	1,224,454	41,944	1·22
1918	3,731,639	1,430,425	1,259,738	159,232	1,418,970	11,455	0·31
1919	3,518,025	1,475,526	1,310,025	185,143	1,495,168	(—) 19,642	(—) 0·56
1920	4,240,607	2,414,448	2,183,868	226,885	2,410,753	3,695	0·09
1921	4,821,237	2,194,471	1,970,682	192,995	2,163,677	30,794	0·63

(—) Denotes net expenditure.

The capital expenditure fluctuated during the last few years owing to the establishment of new industries, and on account of adjustments made by a Committee appointed for the purpose of determining the values.

#### SPECIAL DEPOSITS AND SPECIAL ACCOUNTS.

The Special Deposits and Special Accounts form a very important division of the public finances, not only from the nature and volume of the transactions, but also by reason of the manner in which they are used in connection with the general finances of the State. These Funds are of great assistance in the banking operations of the Government, and they form a strong reserve on which the Treasurer may draw in time of need. Although the Audit Act provides that the funds cannot be used except for the specific purpose for which they were deposited, it has been the custom for many years to draw on the balances for overdrafts of the Consolidated Revenue Fund and Loan Accounts if required. The great bulk of the funds bear interest, whether invested or not, and the power to use them enables the Government to effect a large saving in the interest which might otherwise be charged for accommodation from the banks. The following table shows the amount of these funds at 30th June in each year of the last decade:—

As at 30th June.	Amount.	As at 30th June.	Amount.	As at 30th June.	Amount.
	£		£		£
1912	5,547,741	1915	5,259,710	1918	5,957,608
1913	6,134,067	1916	5,601,471	1919	6,222,291
1914	5,341,000	1917	5,619,703	1920	9,848,520
				1921	13,097,856

The funds are divided into two classes, viz.:—Special Deposits Account and Special Accounts. The total of all moneys under these headings on the 30th June, 1921, was £13,097,856, viz., the Special Deposits Account,

£12,533,652, and the Special Accounts £564,204. The amount at the credit of each account is shown in the following table:—

*Special Deposits Account.*

	£		£
Government Savings Bank of New South Wales Deposit Account ... ..	3,147,500	Water and Drainage Loan Redemption Fund ... ..	73,090
Government Savings Bank of New South Wales Advances Deposit Account ... ..	500,000	Union Trustee Company of Australia, Limited ... ..	20,000
State Debt Commissioners' Deposit Account ... ..	142,563	Government Dock, Newcastle—Store Advance Account ...	2,641
State Debt Trust Accounts ...	168,917	Unclaimed Salaries and Wages Account ... ..	9,060
Public Works and Railway Construction Stores Advance Account ... ..	71,201	Public Trustee—Unclaimed Balances ... ..	59,649
Industrial Undertakings ...	131,212	Commonwealth Advances—Settlement of Returned Soldiers ... ..	6,256,983
Sundry Deposits Account ...	702,269	Wheat Act ... ..	250,000
Municipal Council of Sydney, Sinking Funds ... ..	27,493	Territory Trust Account ...	451
Government Railways Superannuation Account ... ..	35,815	Metropolitan Water and Sewerage Board ... ..	10,681
Housing Fund ... ..	50,356	State Superannuation Board ...	30,723
Revenue Suspense Account ...	15,845	Compensation Fund (Liquor Amendment Act) ... ..	244,656
Broken Hill Water Supply Account ... ..	219,409	Other Accounts ... ..	54,979
Forestry (Act No. 55 of 1916) ...	29,595		
Treasury Guarantee Fund ...	25,112		
Treasury Fire Insurance Fund	188,035		
Treasury Workmen's Compensation Fund ... ..	55,417		
"Sobraon" Fund ... ..	10,000	Total ... ..	£12,533,652

*Special Accounts.*

	£		£
Master-in-Equity Account ...	117,178	Prothonotary Account ... ..	6,511
Master-in-Lunacy Account ...	15,313	Registrar of Probates' Account	17,802
Public Trustee Account ...	407,400	Total ... ..	564,204

Grand Total, Special Deposits and Special Accounts, £13,097,856.

Of the total sum of £13,097,856 at the credit of the Special Deposits and the Special Accounts on the 30th June, 1921, £162,140 was invested in securities; £4,811,495 was uninvested, but used in Advances and on Public Account at interest, the rates allowed ranging from 1 to 4½ per cent.; the remainder, £8,124,221, was similarly used, but without any interest allowance.

The rate of interest paid by the Treasurer on the 30th June, 1921, was 3 per cent., with the following exceptions:—

Crown Leases Security Deposit Account ... ..	4 per cent.
Government Savings Bank of N.S.W. Deposit Account ...	4 and 4½ "
Advances Deposit Account ... ..	4 "
State Debt Commissioner's Trust Accounts, Municipal Council of Sydney Sinking Fund (50 Vic., No. 13) ...	4 "
State Debt Commissioners' Deposit Account ... ..	4½ "
Master-in-Equity and Master-in-Lunacy Accounts ... ..	1 "

On the 30th June, 1921, the trust funds in the custody of the State Treasurer were held as follow:—

In Banks—	£
Special Deposits Account ... ..	12,371,512
Special Accounts ... ..	564,204
New South Wales Funded Stock ... ..	84,750
Commonwealth Inscribed Stock ... ..	6,000
Deposits on Tenders ... ..	49,385
Miscellaneous Securities ... ..	22,005
Total ... ..	£13,097,856

The total amount of interest received by the Treasury during the year ended June, 1921, on bank deposits and other temporary investments of public moneys was £5,602.

#### LOAN APPROPRIATIONS.

All items of expenditure to be met from loan moneys are authorised under an Appropriation Act, in the same manner as the ordinary expenditure chargeable to the general revenue. There is a restriction on the expenditure whether from loans or from revenue, in the provisions of the Public Works Act. Under that Act the question of constructing all works estimated to cost more than £20,000, except those connected with the maintenance of railways, is referred by resolution of the Legislative Assembly to the Parliamentary Standing Committee appointed during the first session of each parliament. The Committee investigates and reports to Parliament, and the Assembly decides whether it is expedient to carry out the proposed work, and if the decision be favourable, a Bill based thereon must be passed before the authorisation is absolute.

The loan appropriations, in quinquennial periods since 1875 to 1919, and for the two years 1920 and 1921, are shown in the following table, the amounts proposed to be expended on public works being distinguished from those required for the redemption of previous loans:—

Period.	Amount appropriated—		
	For Public Works and Services.	For Redemption of Loans.	Total.
	£	£	£
1875-9	10,708,768	...	10,708,768
1880-4	26,457,803	...	26,457,803
1885-9	11,123,394	2,113,800	13,237,194
1890-4	15,927,993	2,910,800	18,838,793
1895-9	13,661,046	2,275,200	15,936,246
1900-4	17,690,893	2,841,612	20,532,505
1905-9	10,509,590	7,480,054	17,989,644
1910-14	31,303,452	5,413,050	36,716,502
1915-19	31,898,271	...	31,898,271
1920-21	26,515,150	...	26,515,150

#### LOAN ACCOUNTS.

The following statement shows the amount of loans raised from the commencement of the Loan Account, in 1853, to the 30th June, 1921, and the proceeds available for expenditure, including the moneys credited to the Railways Loan Account:—

Treasury Bills, Debentures, Inscribed and Funded Stock sold to the 30th June, 1921	...	...	...	...	£257,272,115
Discount, Interest, Bonus, and Charges	...	...	...	...	6,295,408
Net amount raised	...	...	...	...	£250,976,707
Less Amount of Proceeds included in Public Debt, but not credited to Loan Accounts	...	...	...	...	5,107,862
Net amount available for Public Works, etc.	...	...	...	...	£245,868,845

On the 30th June, 1921, an amount of £92,935,623 had been redeemed, of which £9,696,211 was a charge on the Consolidated Revenue, leaving £164,336,492 outstanding at the close of the last financial year. This amount is exclusive of the liabilities on account of the Closer Settlement Fund.

debentures, reference to which is made on a subsequent page. The aggregate amount of interest actually paid by the State on loans to the 30th June, 1921, was £122,467,523, the liability during 1920-21 being £7,273,902.

The services to which the available sum of £245,868,845 was applied are shown in the following table. The redemptions are included in the total, as although they are not items of expenditure on works and services, their inclusion is necessary to account fully for the total expenditure.

Reproductive Works :—						£	£
Railways...	...	...	...	...	...	87,485,009	
Tramways	...	...	...	...	...	9,576,109	
Water Supply	...	...	...	...	...	14,151,187	
Sewerage...	...	...	...	...	...	8,984,976	
Sydney Harbour Trust	...	...	...	...	...	9,001,364	
Darling Harbour Resumptions	...	...	...	...	...	1,321,717	
Industrial Undertakings	...	...	...	...	...	649,847	
Housing Fund	...	...	...	...	...	918,000	
Partly Productive Works :—							132,088,209
Conservation of Water, Artesian Boring, etc.	...	...	...	...	...	7,724,038	
Harbours and Rivers—Navigation	...	...	...	...	...	6,515,555	
Roads, Bridges, and Punts	...	...	...	...	...	1,854,776	
							16,094,369
Public Buildings and Sites, &c....	...	...	...	...	...	18,508,922	
Immigration	...	...	...	...	...	569,930	
Public Works in Queensland prior to separation	...	...	...	...	...	49,855	
Commonwealth Services—							19,128,707
Construction of Telegraph and Telephone Lines	...	...	...	...	...	1,297,582	
Post and Telegraph Offices	...	...	...	...	...	464,263	
Fortifications and Defence Works	...	...	...	...	...	1,457,536	
Lighthouses	...	...	...	...	...	144,288	
Customs Buildings	...	...	...	...	...	54,481	
Quarantine Buildings	...	...	...	...	...	18,099	
Government Dockyard—Cockatoo Island	...	...	...	...	...	502,988	
Naval Victualling Stores—Darling Harbour	...	...	...	...	...	26,450	
							3,965,687
Redemptions :—							£171,276,972
Loans repaid under various Acts	...	...	...	...	...	51,917,517	
Treasury Bills for Loan Services	...	...	...	...	...	31,321,895	
							83,239,412
							£254,516,384
Less Debit Balance, General Loan Account	...	...	...	...	...		8,647,539
Total							£245,868,845

The sum actually expended from loans on public works and services was £171,276,972, and an analysis shows that the proportional allocation of this amount was as follows:—Reproductive works, 77 per cent.; partly productive works, 9 per cent.; other, 11 per cent.; Commonwealth services, 3 per cent.

It will thus be seen that the proceeds of loans have been used judiciously, as most of the works are self-supporting, and have assisted materially in developing the State's resources, enhancing largely the value of the public estate.

The loan expenditure on account of various services during each of the five years ended 30th June is shown below:—

Head of Service.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Railways ... ..	3,706,422	2,294,547	1,441,105	2,387,303	3,598,351
Tramways... ..	136,387	117,561	102,752	202,652	426,687
Water Supply ... ..	731,211	691,006	515,984	732,333	1,404,709
Sewerage ... ..	348,918	257,030	182,946	310,330	317,890
Water Conservation and Irrigation ... ..	355,420	239,776	328,778	998,459	1,131,896
Harbours, Rivers, Wharves, and Docks ... ..	1,021,444	451,644	290,329	432,231	663,842
Public Works, Buildings, etc.—					
Public Abattoirs, Homebush	249,435	152,882	16,329	37,277	171,190
Other... ..	72,074	67,561	55,952	63,458	33,312
Pastures Protection Boards, for					
Wire-netting ... ..	...	...	7,206	26,187	43,568
Grain Elevator and Bulk Wheat Handling ... ..	...	40,797	523,375	643,021	815,556
Industrial Undertakings, including Housing Fund ... ..	87,606	65,864	43,429	453,449	320,878
Returned Soldiers' Settlement, etc. ... ..	85,324	230,654	417,957	1,506,246	1,438,456
Closer Settlement ... ..	...	...	...	1,000,000	2,758,000
Advances to Settlers for financial aid ... ..	...	...	...	16,318	1,659,078
All Other Services ... ..	122,040	48,755	48,904	38,069	20,257
Gross Expenditure... ..	6,916,281	4,658,077	3,975,046	8,847,333	14,803,670
Less Repayments to Credit of Votes ... ..	54,102	170,566	56,159	52,428	102,642
Net Expenditure on Public Works, etc. ... ..	£ 6,862,179	4,487,511	3,918,887	8,794,905	14,701,028
Loans repaid by New Loans (including Treasury Bills) ... ..	1,467,083	10,767	12,813,724	15,181,648	995,820
Total ... ..	£ 8,329,262	4,498,278	16,732,611	23,976,553	15,696,848

The loan expenditure, exclusive of redemptions, conversions, and renewals, is shown herewith for the period of thirty-nine years, 1842-1880, in decennial periods from 1881 to 1920, and to the end of the financial year 1920-21:—

Years.	During Each Period.		For Whole Period.	
	Amount.	Per Inhabitant.	Amount.	Per Inhabitant.
	£	£ s. d.	£	£ s. d.
1842-1880	16,316,529	41 12 2	16,316,529	21 9 11
1881-1890	27,639,022	29 8 8	43,955,551	39 3 7
1891-1900	20,515,704	16 6 8	64,471,255	47 12 1
1901-1910	26,876,468	18 0 4	91,347,723	56 11 11
1911-1920	65,228,221	35 5 8	156,575,944	78 6 5
1920-1921	14,701,028	7 0 8	171,276,972	81 9 0

The total expenditure from loans now exceeds the public debt proper by £6,940,480. As a general rule, loans are renewed on maturity, and while the total actual expenditure increases each year, the outstanding debt may be increased or reduced according to the operations necessary to the flotation or redemption of loans.

## PUBLIC DEBT (PROPER).

The first loans raised by New South Wales were for the promotion of immigration. From 1831 to 1841 the expenses attached to immigration were met by the Land Fund, into which were paid the proceeds of land sales, but these proved insufficient for the purpose in 1841, and it became necessary to obtain additional funds.

It was, therefore, decided by the Governor to borrow on the security of the Territorial or Land Revenue, and a debenture loan of £49,000 was offered locally on the 28th December, 1841. The loan was issued during 1842 in two instalments, the nominal rates of interest being 5*d.* and 4*d.* per cent., respectively, per diem. This was the first loan floated in Australia, as well as the first raised by an Australian Government. It was not until 1854 that a loan was placed on the London market.

Between 1842 and 1855 ten loans, amounting in all to £705,200 were raised for immigration purposes. Debentures representing £329,700 were redeemed from the Territorial Revenue, and the balance, £375,500, was taken over as a public liability upon the institution of Responsible Government.

The Public Debt in November, 1855, when Responsible Government was proclaimed, was £1,000,800, distributed under the following heads:—

Raised on the Security of Territorial Revenue—						£
Immigration	...	...	...	...	...	423,000
Sydney Railway Company's Loan	...	...	...	...	...	217,500
Raised on the Security of General Revenue—						
Amount for Sydney Sewerage	...	...	...	...	...	54,900
„ „ Sydney Water Supply	...	...	...	...	...	28,000
„ „ Railways	...	...	...	...	...	256,400
„ „ Public Works	...	...	...	...	...	21,000
Total	...	...	...	...	...	<u>£1,000,800</u>

The following table shows the amount of Public Debt outstanding at the end of each quinquennial period. The growth of the debt was not rapid until after the year 1880, but during the next five years twenty millions and a half were added to the total, and in the next quinquennium approximately thirteen millions. The greatest addition in any of the quinquennial periods shown was made in the five years from 1910 to 1915, when over thirty-five millions were added to the total.

Year.	Amount.	Year.	Amount.	Year.	Amount.
	£		£		£
1842	49,500	1870	9,681,130	1900	65,332,993
1845	97,900	1875	11,470,637	1905	82,321,998
1850	132,500	1880	14,903,919	1910	92,525,095
1855	1,000,800	1885	35,564,259	1915	127,735,405
1860	3,830,230	1890	48,383,333	1920	152,776,082
1865	5,749,630	1895	58,220,933	1921	164,336,492

The total debt quoted above and in subsequent tables, unless otherwise mentioned, is exclusive of Debentures and Ministerial certificates issued under Closer Settlement Acts, the amount at 30th June, 1921, being £4,241,436.

The following table shows the position of the public debt proper as at 30th June, 1912, and annually thereafter. The amount at 30th June, 1918,

includes £10,076,000 floated in February, 1918, being part of a loan of £12,648,477 for redemptions due 1st September, 1918, which will explain the difference in the amount per head for the years 1917 to 1919.

As at 30th June.	Authorised to date.	Sold.	Redeemed.			Public Debt proper on 30th June.	
			From Con- solidated Revenue and Sinking Fund.	From General Loan Account, including Renewals.	Total.	Total.	Per Head.
	£	£	£	£	£	£	£ s. d.
1912	159,512,197	143,662,006	8,775,887	34,833,484	43,609,371	100,052,635	57 7 1
1913	169,186,717	154,464,714	9,519,705	38,774,262	48,293,967	106,170,747	58 6 9
1914	183,018,817	165,746,770	9,519,705	39,532,034	49,051,739	116,695,031	62 5 4
1915	207,445,569	185,651,798	9,519,705	48,396,688	57,916,393	127,735,405	67 11 1
1916	220,603,887	191,244,436	9,519,705	51,210,713	60,730,418	130,514,018	68 19 8
1917	228,636,874	200,340,248	9,524,105	52,677,796	62,201,901	138,138,347	72 10 5
1918	245,493,790	214,797,361	9,524,105	52,688,563	62,212,668	152,584,693	78 11 4
1919	249,677,612	222,340,928	9,664,105	65,502,287	75,166,392	147,174,536	73 14 0
1920	279,207,980	244,715,885	9,696,211	82,243,592	91,939,803	152,776,082	73 17 3
1921	293,101,030	257,272,115	9,696,211	83,239,412	92,935,623	164,336,492	78 2 11

In considering the figures relating to redemptions, the loans paid off from revenue or from sinking fund can alone be said to be absolutely redeemed. When an old loan is repaid from the proceeds of subsequent loans there is merely a change in the form of the liability, which up to the time of the war was accompanied frequently by some reduction of the interest charge, but recent renewals here had to be effected at a considerable increase in the rate of interest.

Prior to 1900, the State Government depended largely upon the London money market for the flotation of its loans, but during the last twenty years the requirements have been met to a much greater extent locally, as will be seen from the following statement, which shows the public debt proper on each register at quinquennial intervals from 1900 to 1920, and for the year 1920-21. Stocks may be transferred at any time from London to Sydney, and it should be noted that the amount registered in Sydney in 1920 and 1921 includes £7,400,000 advanced by the Commonwealth Government, which is repayable not later than 1925, and bears interest at 4½ per cent. approximately.

As at 30th June.	Registered in London.		Registered in Sydney.		Total Public Debt proper.
	Amount.	Proportion to Total Debt.	Amount.	Proportion to Total Debt.	
	£	per cent.	£	per cent.	£
1900	55,060,650	84.28	10,272,343	15.72	65,332,993
1905	64,007,550	77.75	18,314,448	22.25	82,321,998
1910	67,154,805	72.58	25,370,290	27.42	92,525,095
1915	86,167,288	67.46	41,568,117	32.54	127,735,405
1920	101,977,445	66.75	50,798,637	33.25	152,776,082
1921	108,417,602	65.97	55,918,890	34.03	164,336,492

From the above table it will be noted that the amount of liabilities held locally at the close of the financial year 1920-21 amounted to slightly more than one-third of the total indebtedness.



The annual payments under each head for interest and for expenses of the public debt since 1912 are shown below:—

Year ended 30th June.	Interest.	Re-demptions.	Expenses Connected With Management of Inscribed Stock.	Commission Paid to Financial Agents in England and New South Wales.	Interest and Charges paid.		Average Rate of Interest Payable on Debt.
					Total.	Per Inhabitant.	
	£	£	£	£	£	£ s. d.	per cent.
1912	3,430,096	436,921	19,088	2,918	3,889,023	2 7 6	3·46
1913	3,516,233	450,602	19,990	1,511	3,988,336	2 6 1	3·54
1914	3,881,011	5,632	21,171	1,039	3,908,853	2 2 4	3·49
1915	4,125,600	5,688	21,394	1,492	4,154,174	2 4 1	3·60
1916	4,552,765	6,504	21,705	2,117	4,583,091	2 8 5	3·71
1917	4,914,211	6,868	22,297	1,991	4,945,367	2 12 3	3·81
1918	5,188,754	6,819	22,746	1,988	5,220,307	2 14 3	3·98
1919	5,462,991	6,833	20,861	2,382	5,493,067	2 15 0	4·10
1920	6,030,721	6,976	20,213	4,169	6,062,079	2 19 6	4·30
1921	6,601,894	2,566	21,102	5,506	6,631,068	3 3 6	4·42

The interest paid during each year shown above is exclusive of payments on account of trust funds and special deposits held by the Government, and on closer settlement debentures.

The public debt is partly funded and partly unfunded, the former comprising debentures and inscribed and funded stocks; and Treasury bills constituting the latter. The amounts outstanding, and the annual interest payable on the 30th June, 1921, were as follow:—

Description of Stock	Amount Outstanding.	Annual Interest Payable.
<b>Debentures—</b>	£	£
Matured ... ..	4,550	...
Still bearing Interest ... ..	13,792,930	666,791
<b>Inscribed and Funded Stock—</b>		
Matured ... ..	1,285	...
Still bearing Interest ... ..	140,318,627	6,148,581
<b>Total, Funded Debt...</b>	<b>£154,117,392</b>	<b>£6,815,372</b>
<b>Treasury Bills—</b>		
Still bearing Interest ... ..	10,219,100	458,530
<b>Total, Unfunded Debt</b>	<b>£10,219,100</b>	<b>£458,530</b>
<b>Total, Public Debt ...</b>	<b>£164,336,492</b>	<b>£7,273,902</b>

The following table shows the total debt outstanding on 30th June, 1921, at each rate of interest, and the annual amount payable thereon.

Rate per cent.	Amount of Stock and Bills.	Annual Interest payable.
£ s. d.	£	£
6 10 0 ... ..	6,500,000	422,500
5 15 0 ... ..	18,076,000	1,039,370
5 10 0 ... ..	18,574,475	1,021,596
5 6 11 ... ..	250,300	13,365
5 5 3 ... ..	500,000	26,312
5 5 0 ... ..	15,330,029	804,826
5 0 0 ... ..	6,617,882	330,894
4 10 0 ... ..	5,981,384	269,162
4 2 6 ... ..	7,400,000	305,250
4 0 0 ... ..	28,143,540	1,125,742
3 15 0 ... ..	2,644,960	99,186
3 10 0 ... ..	37,265,314	1,304,286
3 0 0 ... ..	17,047,073	511,413
Matured...	5,835	.....
Total ... ..	£164,336,492	£7,273,902

It should be noted that the rate given for the £7,400,000 outstanding at £4 2s. 6d. per cent. is approximate only, as it has not been fixed definitely.

#### DATES OF MATURITY.

The dates of repayment of the public debt extend to 1963, and the sums falling due for redemption each year vary considerably, as will be seen from the following table, which shows the due dates and the amount repayable in London and in Sydney:—

Due Date.	Registered in—		Total.
	London.	Sydney.	
Matured ... ..	£ 3,750	£ 2,085	£ 5,835
Minimum date expired ... ..	...	7,395,208	7,395,208
1921-22 ... ..	...	7,334,443	7,334,443
1922-23 ... ..	6,900,000	3,611,757	10,511,757
1923-24 ... ..	1,999,300	4,229,659	6,228,959
1924-25 ... ..	16,427,315	21,251,368	37,678,683
1925-26 ... ..	...	3,083,331	3,083,331
1926-27 ... ..	5,997,100	4,801,526	10,798,626
1927-28 ... ..	4,999,300	286,700	5,286,000
1928-29 ... ..	...	4,000	4,000
1929-30 ... ..	...	165,040	165,040
1930-31 ... ..	...	2,799,420	2,799,420
1932-33 ... ..	13,057,254	18,746	13,076,000
1933-34 ... ..	12,636,046	50,254	12,686,300
1934-35 ... ..	4,999,120	880	5,000,000
1935-36 ... ..	12,435,627	64,373	12,500,000
1940-41 ... ..	6,498,765	1,235	6,500,000
1950-51 ... ..	12,068,650	181,350	12,250,000
1962-63 ... ..	10,394,175	105,825	10,500,000
Interminable ... ..	...	530,190	530,190
Permanent ... ..	1,200	1,500	2,700
Total ... ..	£ 108,417,602	55,918,890	164,336,492

The latest due date has been given in the table, but in several cases the loans may be redeemed earlier, subject to the Government giving notice to that effect, at periods ranging from three to twelve months.

The amounts shown in preceding tables do not represent the total liabilities of the State Government, as they are exclusive of Debentures and Ministerial Certificates issued for the purchase of estates under Closer Settlement Acts, Advances by the Commonwealth Government, Trust Funds and Special Deposits used by the Treasurer, and payments on Bank Accounts still to be transferred. Details of these items are shown below, and the corresponding figures for 1920 are included for purposes of comparison.

Liabilities.	As at 30th June, 1920.		As at 30th June, 1921.	
	£	£	£	£
Public Debt Proper ... ..	...	152,776,082	...	164,336,492
Debentures and Ministerial Certificates under Closer Settlement Acts ...	...	4,126,835	...	4,241,436
Trust Funds and Special Deposits used by Treasurer—				
Advances by Commonwealth—				
Soldiers' Settlement ...	1,996,731	...	6,256,983	...
Wheat Storage ... ..	750,000	...	250,000	...
	2,746,731	...	6,506,983	...
Accounts overdrawn, covered by Special Deposits and Special Accounts ... ..	5,909,822		4,480,560	
		8,656,553		10,987,543
Payments by Banks on Public Account still to be transferred ... ..	...	778,017	...	1,044,120
Total Liabilities ... ..	...	166,337,487	...	180,609,591
Per Head of Population ... ..	...	£82 2 7	...	£85 17 9

On the 30th June, 1921, the liabilities of the State, as shown above, were £180,609,591, but this amount should be decreased by advances to be repaid under the headings shown below:—

	£
Country Towns Water Supply ... ..	1,428,435
Country Towns Sewerage and Drainage ... ..	505,896
Water and Drainage Trusts ... ..	120,088
Other Services ... ..	85,748
Total ... ..	£2,140,167

There is also the property transferred to the Federal Government, valued at £3,965,687, on which interest is paid at 3½ per cent. per annum, and the balance at credit of the Sinking Fund, £409,988, so that the net amount of the liabilities is reduced to £174,093,749, and there is a further set-off in the amounts repayable by settlers under Closer Settlement Acts.

*Cost of Raising Loans.*

The charges incidental to the issue of loans in London are heavy. Operations are conducted by the Bank of England and by the London and Westminster Bank, and the former charges  $\frac{1}{4}$  per cent. per £100 of stock on all loan issues, and £350 per million annually for the inscription and management of stock, including the payment of the half-yearly dividends; while the latter charges  $\frac{1}{4}$  per cent. and £150 per million respectively for similar services. In Sydney the Bank of New South Wales and the Commercial Banking Company of Sydney (Limited) transact all Government banking business. The former acts as the financial agent for the State in Victoria, and undertakes the payment of the half-yearly dividends on local debentures and funded stock. The Treasury directly conducts the operations connected with the issue of New South Wales Funded Stock and Treasury bills, and no local loan has been underwritten.

The following statement shows the charges for the negotiation of loans floated during the period from 1914 to 1921, inclusive of the accrued interest and bonuses allowed to investors. Local Debentures and Treasury bills have not been included, as those disposed of in Sydney are usually sold at par, and little expenditure, if any, is incurred, while the securities under these headings negotiated in London are generally for short periods pending the flotation of long-dated loans.

Year when Floated.	Amount of Principal.	Gross Proceeds.	Charges, etc.					Expenses per £100 of Gross Proceeds.
			Stamp Duty, Postage, and other Expenses.	Bank Commis- sion.	Paid to Investors— Interest Bonus and Discount Bonus.	Broker- age and Under- writing.	Total.	
	£	£	£	£	£	£	£	£ s. d.
Issued in London.								
1914	7,500,000	7,312,500	46,875	18,750	55,473	115,270	236,368	3 3 1
1915	7,000,000	6,965,000	23,310	17,500	9,015	106,553	156,378	2 4 11
1917	2,500,000	2,500,000	3,095	6,250	14,389	38,650	62,384	2 9 11
1918	19,076,000	19,001,000	42,135	47,690	41,219	223,027	354,071	1 17 3
1919	3,000,000	2,985,000	4,295	7,500	7,581	44,386	64,062	2 2 11
1919-20	5,000,000	4,910,000	6,918	12,500	11,240	68,995	99,653	2 0 7
1920-21	6,500,000	6,500,000	73,198	16,250	22,486	112,544	224,478	3 9 1
Issued in Sydney.								
1914	532,056	532,056	Nil.	Nil.	Nil.	1,300	1,300	0 4 11
1917	1,770,154	1,770,154				2,110	2,110	0 4 8
1918	979,313	979,313				Nil.	Nil.	Nil.
1919	1,492,367	1,492,367				"	"	"
1919-20	14,778,156	14,778,186				20,000	20,000	0 2 8
1920-21	5,309,000	5,309,000				12,000	12,000	0 4 6

The Sydney sales take place at the Treasury on the basis of £100 cash for every £100 of stock, and a commission of  $\frac{1}{4}$  per cent. is allowed when a

broker is engaged. The cost of negotiation for issues in Sydney during the past ten years was about 4s. 2d. per £100 of gross proceeds, whilst the charges for London loans, including underwriting, averaged £2 7s. 7d.

### STOCK QUOTATIONS.

The average market prices of stock in Sydney are shown in the following table for each month of the year 1920-21, the figures being taken from the *Sydney Stock and Share List*.

Date.	5½ per cent. Stock.	5½ per cent. Stock.	5 per cent. Stock.	4½ per cent. Stock.	4 per cent. Stock.	3½ per cent. Stock.	3½ per cent. Stock.	3 per cent. Stock.
July, 1920 ... ..	£ *	£ *	£ *	£ *	£ 93½	£ *	£ 58	£ 54
Aug., 1920 ....	96	*	*	88½	93	*	*	*
Sept., 1920 ... ..	97½	*	*	*	*	*	58	54
Oct., 1920 ....	*	*	*	*	*	*	57½	53
Nov., 1920 ....	94	*	*	*	*	*	*	*
Dec., 1920 ... ..	93½	92	92	*	*	*	*	*
Jan., 1921 ....	94½	*	*	*	*	*	*	*
Feb., 1921 ... ..	95½	95	93½	*	*	*	*	50½
Mar., 1921 ... ..	95½	95½	*	*	93½	*	57½	50
Apr., 1921 ....	95	95½	*	*	94	*	*	*
May, 1921 ... ..	95½	95½	*	*	92½	*	57½	50
June, 1921 ... ..	95½	95½	*	*	93	92½	57½	50

\* No quotations.

The only London prices available for the twelve months ended 30th June, 1921, as shown in the *Economist*, relate to the 5½ per cent. stock, which was quoted at 92 in July, 1920. It rose to 94 in October of that year, and fluctuated between those two prices until June, 1921, when the quotation was 93.

### REDEMPTIONS AND SINKING FUNDS.

Under the provisions of the State Debt and Sinking Fund Act, 1904, the State Debt Commissioners' Board was constituted, the members being the Treasurer, the Chief Justice, the Speaker of the Legislative Assembly, and the Under Secretary for Finance and Trade; and the Board controls certain trust funds and special accounts. The original Act provided for a general sinking fund, and a sum of £350,000 was paid each year to the credit of the fund, while under the Treasury Bills Deficiency Act, 1905, an additional £50,000 was required to be transferred to the fund whenever a sufficiently large surplus enabled this to be done. The Commissioners apply the credit balance in purchasing or paying-off stock, debentures, or Treasury bills; and

they are empowered to invest the moneys in approved securities. The State Debt and Sinking Fund (Amendment) Act, 1914, provided that where at the close of a year there is a deficiency on the Consolidated Revenue Account the Commissioners shall repay any amount, not being greater than such deficiency, which had been issued from the fund to the Commissioners during the year. Since the last-mentioned Act was passed the amount of £350,000 has been paid to the Commissioners each year, and has been returned to the Treasury.

The transactions under the Act for the financial year ended the 30th June, 1921 were as follow:—

RECEIPTS.					£
Annual Contribution from Consolidated Revenue Fund	...	...	...	...	350,000
Country Towns Water Supply	...	...	...	...	7,151
Country Towns Sewerage	...	...	...	...	2,377
Closer Settlement under Crown Lands Act of 1895	...	...	...	...	2,566
					<hr/> 12,094
Interest—Funded Stock	...	...	...	...	9,714
Deposit with Colonial Treasurer	...	...	...	...	3,541
					<hr/> 13,255
Balance brought forward from 1919-20	...	...	...	...	384,639
					<hr/>
Total	...	...	...	...	<hr/> £759,988 <hr/>

EXPENDITURE.					£
Annual contribution from Consolidated Revenue Fund	...	...	...	...	350,000
Balance carried forward to 1920-21—					<hr/>
Invested in N.S.W. Funded Stock	...	...	...	...	267,361
On Deposit with Colonial Treasurer	...	...	...	...	142,563
On Account Current	...	...	...	...	64
					<hr/> 409,988
Total	...	...	...	...	<hr/> £759,988 <hr/>

#### FINANCIAL RELATIONS BETWEEN THE STATES AND THE COMMONWEALTH.

The relations between States and Commonwealth are such that neither can truly gain by obtaining advantage over the other. The affairs of each are so intertwined that if one be hampered the other must be affected also, and the development of Australia, on which both are dependent, will be retarded.

One of the most difficult problems to be solved in formulating a constitution for the Commonwealth of Australia was the determination of the

relative shares of the Commonwealth and States respectively in the proceeds of taxation from Customs and Excise. Each of the two governing powers was invested with authority to levy direct taxation, consequently no difficulty arose in this respect; but the power to impose tariffs through Customs and Excise duties was vested in the Commonwealth Parliament. Hence it became necessary to decide some proportion of the revenue derivable from these sources of indirect taxation which should constitute by legal right the share of the States *qua* States in these imposts.

From the time when the Federal Constitution was under discussion to the time when the Surplus Revenue Act was passed in 1910, it was universally admitted that in any arrangement between the Commonwealth and the States the proportion of Customs and Excise Revenue to be retained by the one, and the proportion to be handed back to the other, should be based on the respective needs of each. Practically the only difference of opinion was whether expenditure on such services as it has been the public policy of the States or Commonwealth to undertake, and which are called "Business Undertakings" in New South Wales, should be included in the "needs," or whether it should be premised that they should pay for themselves.

It was in recognition of these needs that it was provided by section 87 of the Commonwealth Constitution Act, popularly known as the "Braddon" section, that during the first ten years of the existence of the newly-created Australian Commonwealth there should be returned to the States three-fourths of the net revenue from Customs and Excise; also, that such proportion should continue to be returnable after the ten-year period until the Commonwealth Parliament should decide what other disposition of these revenues should be made.

During the early years of the experience of the Commonwealth the question of the policy to be pursued at the expiry of the period of ten years named in the Braddon section was not immediately pressing, because (1) the needs of the Federation had not become sufficiently urgent to cause a necessity for appropriating the full quarter allocated for Commonwealth requirements, and (2) the fact that a term of years had yet to ensue before a fresh arrangement could be made under the Constitution, tended to the postponement of the determination of a question which was fully recognised to be intricate and difficult of solution.

Towards the close of the ten-year period, however, it became evident that more revenue would be required to enable the Federal Government to fulfil its assigned functions. A number of conferences were held by the Premiers of the several States, and attempts were made to devise an acceptable plan relating to the allocation of the Customs and Excise revenue, but until the year 1909 a definite agreement was not reached. In that year it was agreed that the amount to be returned should be 25s. per head of population, and the original proposal was that the Constitution should be altered to provide that payment. At the subsequent necessary referendum, however, the proposal was defeated by a small majority, and the Surplus Revenue Act of 1910 was passed by the Commonwealth Parliament. The Act provides that for ten years, from 1st July, 1910, and thereafter, until Parliament provides otherwise, the Commonwealth shall pay to each State by monthly instalments an annual sum amounting to 25s. per head of its population.

This measure was a temporary expedient, and the matter has been discussed at length by representatives of the Government of the Commonwealth and of the States many times without reaching finality. A conference of Premiers was held in May, 1920, and continued in July, and

other meetings have been held since that date, but although the parties arrived at satisfactory agreements upon several important matters, some involving heavy expenditure, they were unable to agree upon the two most important questions of finance, namely, the co-ordination of borrowing, and the per capita payment to the States.

It is interesting to consider the following table, which shows, taking the combined expenditure of the Commonwealth and States on administrative or governmental functions, that is, exclusive of business undertakings, the proportion of the total expenditure which was incurred by the States and by the Commonwealth in 1901-2, the first year of the Commonwealth, in 1909-10, the year before the commencement of the Surplus Revenue Act, in 1913-14, the year before the War, and in 1920-21, the latest year. The table shows also the proportion of Customs and Excise revenue retained by the Commonwealth in each of those years:—

Year.	Proportion of Total Expenditure (exclusive of Business Undertakings).		Proportion of Customs and Excise retained by Commonwealth.
	By States.	By Commonwealth.	
	per cent.	per cent.	per cent.
1901-02 ...	85	15	15
1909-10 ...	79	21	25
1913-14 ...	73	27	56
1920-21 ...	70	30	79

In 1920-21, expenditure by the Commonwealth on war services has not been included for the purposes of this statement.

The following statement shows the extent to which the States' revenues are dependent on the per capita payments from the Commonwealth. It gives the proportion per cent. of the revenue (excluding business undertakings) of each State from the principal sources in 1920-21, and it is obvious that if the Commonwealth payments were reduced materially the States could balance their accounts only by severe economy or by heavy increases in taxation.

State.	Proportion of Revenue obtained from—				
	Commonwealth Payments.	Taxation.	Land.	All Other Sources.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.
New South Wales ...	18·7	54·4	15·9	11·0	100
Victoria ...	23·1	44·6	3·9	28·4	100
Queensland ..	12·6	51·1	22·8	13·5	100
South Australia ...	17·6	48·5	8·9	25·0	100
Western Australia ...	17·1	28·8	13·2	40·9	100
Tasmania ...	24·0	46·9	6·8	22·3	100
All States ...	18·5	48·5	13·3	19·7	100



The receipts of business undertakings have been excluded on the assumption that the charges for those services should be fixed to meet the expenditure thereof.

The next statement shows the principal items of revenue and expenditure of the States and of the Commonwealth for the year 1920-21, and is included to show the relation of the various States to each other, and of all the States to the Commonwealth.

Heading.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	All States.	Commonwealth.
<i>Revenue.</i>								
	£	£	£	£	£	£	£	£
<b>GOVERNMENTAL—</b>								
Payments by Commonwealth .. ..	2,533,234	1,878,449	910,632	588,603	564,735	†362,514	6,838,167	..
<b>Taxation—</b>								
Customs and Excise .. ..	..	..	..	..	..	..	..	81,809,906
Income Tax .. ..	4,399,860	1,591,198	2,410,171	852,036	334,320	348,005	9,935,090	14,331,408
Land Tax .. ..	2,717	331,756	469,175	168,020	57,791	89,005	1,118,464	2,155,609
Probate Duties .. ..	727,716	702,468	*660,763	158,107	42,407	53,407	2,344,868	1,179,513
Other .. ..	2,258,340	1,002,713	142,533	443,913	520,840	218,185	4,586,524	2,930,896
<b>Total Taxation .. ..</b>	<b>7,388,133</b>	<b>3,628,135</b>	<b>3,682,642</b>	<b>1,622,076</b>	<b>955,358</b>	<b>708,602</b>	<b>17,984,946</b>	<b>52,427,421</b>
Land .. ..	2,151,465	313,370	1,640,624	296,494	437,266	108,064	4,942,283	..
Other Public Services .. ..	748,291	564,454	108,420	361,626	334,071	221,200	2,838,062	220,744
Other Revenue .. ..	747,412	1,748,229	862,054	474,734	521,703	116,225	4,469,357	4,108,767
<b>Total Governmental ..</b>	<b>13,568,535</b>	<b>8,132,637</b>	<b>7,204,372</b>	<b>3,343,533</b>	<b>3,313,133</b>	<b>1,510,605</b>	<b>37,072,815</b>	<b>56,756,982</b>
<b>Business Undertakings ..</b>	<b>20,462,861</b>	<b>10,389,898</b>	<b>5,396,659</b>	<b>3,807,833</b>	<b>2,476,432</b>	<b>594,843</b>	<b>44,128,526</b>	<b>8,760,676</b>
<b>Total Revenue .. ..</b>	<b>34,031,396</b>	<b>18,522,535</b>	<b>12,601,031</b>	<b>7,151,366</b>	<b>6,789,565</b>	<b>2,105,448</b>	<b>81,201,341</b>	<b>65,517,658</b>
<i>Expenditure.</i>								
	£	£	£	£	£	£	£	£
<b>GOVERNMENTAL—</b>								
Administrative and Departmental .. ..	12,374,300	5,398,544	4,527,932	2,802,036	2,379,496	975,348	23,455,656	9,172,183
Interest, excluding Business Undertakings .. ..	1,637,586	1,418,201	980,614	342,501	532,365	436,690	5,297,957	1,307,680
Sinking Fund and Redemptions .. ..	2,566	285,355	..	10,000	815,654	95,165	708,740	24,252
Defence .. ..	..	..	..	..	..	..	..	3,989,926
War Services, including Pensions and Interest ..	..	..	..	..	..	..	..	83,286,233
<b>Total Governmental ..</b>	<b>14,014,452</b>	<b>7,100,100</b>	<b>5,458,546</b>	<b>3,154,537</b>	<b>3,227,515</b>	<b>1,507,203</b>	<b>34,462,363</b>	<b>47,780,272</b>
<b>BUSINESS UNDERTAKINGS—</b>								
Working Expenses .. ..	14,930,954	8,570,190	5,132,566	2,880,316	2,567,512	476,187	34,857,726	7,281,586
Interest and Sinking Fund .. ..	5,531,486	2,695,308	2,000,089	1,508,787	1,381,263	205,766	13,322,699	626,863
<b>Total Business Undertakings ..</b>	<b>20,462,440</b>	<b>11,265,498</b>	<b>7,132,655</b>	<b>4,389,103</b>	<b>4,348,776</b>	<b>681,953</b>	<b>48,180,425</b>	<b>7,908,449</b>
New Works .. ..	..	..	..	..	..	..	..	2,098,305
Payments to States .. ..	..	..	..	..	..	..	..	6,840,163
<b>Total Expenditure .. ..</b>	<b>34,476,892</b>	<b>18,365,598</b>	<b>12,591,201</b>	<b>7,543,640</b>	<b>7,476,291</b>	<b>2,189,156</b>	<b>82,642,778</b>	<b>64,624,087</b>

\* Includes other Stamp Duties—not shown separately.

† Includes £90,000, special grant.

In the above table the amounts shown as expended as interest on the capital expenditure on business undertakings were known absolutely in New South Wales, but were estimated for the other States, where the information is not known definitely, on the assumption that the average rate of interest paid on the whole public debt was the rate on the loan expenditure of these undertakings. It is believed that the error due to this assumption is not large.

The administrative and departmental services of the States comprise such important matters as Education, Hospitals and Charities, Police and Law, Local Government, Lands, Mines, Agriculture, and Forestry; and of the Commonwealth, Invalid and Old Age Pensions, Maternity Allowances, Defence, and Trade and Customs.

Relatively to population, the heads of Revenue and Expenditure of each State separately, of all the States combined, and of the Commonwealth, in 1920-21 appear as follow:—

Heading.	Per head of population.							
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	All States.	Commonwealth.
<i>Revenue.</i>								
GOVERNMENTAL—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Payments by Commonwealth .. ..	1 4 3	1 4 7	1 4 3	1 4 0	1 14 2	1 14 0	1 5 4	....
Taxation—								
Customs and Excise .. ..	....	....	....	....	....	....	....	5 16 7
Income Tax .. ..	2 2 1	1 0 10	3 4 1	1 14 8	1 0 2	1 12 8	1 16 9	2 12 7
Land Tax .. ..	....	0 4 4	0 12 6	0 6 10	0 3 6	0 8 5	0 4 2	0 7 11
Probate Duties .. ..	0 7 0	0 9 2	0 17 7	0 6 5	0 2 7	0 5 0	0 8 8	0 4 4
Other .. ..	1 1 8	0 13 2	0 3 9	0 18 1	1 11 6	1 0 6	0 17 0	0 10 9
Total Taxation .. ..	3 10 9	2 7 6	4 17 11	3 6 0	2 17 9	3 6 7	3 6 7	9 12 2
Land .. ..	1 0 7	0 4 1	2 3 7	0 12 1	1 6 5	0 9 8	0 18 3	....
Other Public Services .. ..	0 7 2	0 7 5	0 2 11	0 14 9	2 10 5	1 0 10	0 10 6	0 0 10
Other Revenue .. ..	0 7 1	1 2 10	1 2 11	0 19 4	1 11 7	0 10 10	0 16 6	0 15 0
Total Governmental .. ..	6 9 10	5 6 5	9 11 7	6 16 2	10 0 4	7 1 11	6 17 2	10 8 0
Business Undertakings .. ..	9 15 10	6 16 0	7 3 5	7 15 0	10 10 2	2 15 11	8 3 4	1 12 1
Total Revenue .. ..	16 5 8	12 2 5	16 15 0	14 11 2	20 10 6	9 17 10	15 0 6	12 0 1
<i>Expenditure.</i>								
GOVERNMENTAL—								
Administrative and Departmental .. ..	5 18 6	3 10 7	6 0 5	5 14 1	7 3 10	4 11 8	5 5 4	1 13 7
Interest, excluding Business Undertakings .. ..	0 15 8	0 18 7	1 4 9	0 13 11	1 12 2	2 1 0	0 19 7	0 4 10
Sinking Fund and Redemptions .. ..	....	0 3 9	....	0 0 5	0 19 1	0 8 11	0 2 8	....
Defence .. ..	....	....	....	....	....	....	....	0 14 8
War Services, including Pensions and Interest .. ..	....	....	....	....	....	....	....	6 2 0
Total Governmental .. ..	6 14 2	4 12 11	7 5 2	6 8 5	9 15 1	7 1 7	6 7 7	8 15 1
BUSINESS UNDERTAKINGS—								
Working Expenses .. ..	7 2 11	5 12 2	6 16 5	5 17 4	8 13 5	2 4 9	6 9 0	1 6 8
Interest and Sinking Fund .. ..	2 12 11	1 15 3	2 13 2	3 1 5	4 3 6	0 19 4	2 9 2	0 2 4
Total Business Undertakings .. ..	9 15 10	7 7 5	9 9 7	8 18 9	12 16 11	3 4 1	8 18 2	1 9 0
New Works .. ..	....	....	....	....	....	....	....	0 7 8
Payments to States .. ..	....	....	....	....	....	....	....	1 5 1
Total Expenditure .. ..	16 10 0	12 0 4	16 14 9	15 7 2	22 12 0	10 5 8	15 5 9	11 16 10

The payments by the Commonwealth to all the States in 1920-21 represented 25s. 4d. per head of population, the excess of 4d. per head over the 25s. mentioned above being due to a special payment to Western Australia, and a special grant of £90,000 to Tasmania. Under the Surplus Revenue Act of 1910 a moiety of the special payment to Western Australia is deducted from the amounts payable to the State at the rate of 25s. per head, so that the sum actually paid to New South Wales in 1920-21 represented only 24s. 3d. per head.

The Commonwealth Constitution Act of 1901 empowered the Commonwealth to take over from the States their public debts as existing at the establishment of the Commonwealth. In 1910 a proposed law to alter the Constitution so as to authorise the transfer of all the debts incurred by the States was ratified by means of a referendum, but no further action has been taken.

The public debts of the States as at 30th June, 1921, amounted to £458,408,898, and of the Commonwealth, to £401,720,025 of which £359,606,719 was incurred on account of the war. The following table shows the public debt of each State and of the Commonwealth, also the total amount of interest payable. In the Statement on page relating to the finances of the States and Commonwealth, the interest payable appears partly under Governmental Services and partly under Business Undertakings.

State.	Public Debt.†		Interest Payable.	
	Total.	Per Head.	Total.	Per Head.
	£	£ s. d.	£	£ s. d.
New South Wales... ..	*164,336,492	78 2 11	*7,273,902	3 9 2
Victoria ... ..	97,317,830	63 7 2	3,828,154	2 9 10
Queensland... ..	80,382,052	104 10 8	2,930,703	3 16 3
South Australia ... ..	48,556,552	97 11 11	2,170,638	4 7 3
Western Australia ... ..	49,039,667	147 4 4	1,913,268	5 14 10
Tasmania ... ..	18,776,305	88 11 6	834,318	3 18 9
All States ... ..	458,408,898	84 2 1	18,950,983	3 9 6
Commonwealth—				
War Debt ... ..	359,606,719	65 18 0	17,447,229	3 3 11
Other ... ..	42,113,306	7 14 4	1,849,278	0 6 9
Total Commonwealth ...	401,720,025	73 12 4	19,296,507	3 10 8
Grand Total ... ..	860,128,923	157 14 5	38,247,490	7 0 2

\* Exclusive of Closer Settlement Debentures.

† Gross amount—Sinking Funds not deducted.

The Public Debt of the States as shown above appears large, but no less than 75 per cent. of the total amount, ranging from 65 per cent. in Western Australia to 85 per cent. in New South Wales, has been spent on works of a reproductive character, such as Railways, Tramways, Water Supply, Sewerage, Harbours and Rivers. The balance of the debt has been expended on other necessary works or services, namely, Roads, Bridges, Industrial Undertakings, Promotion of Agriculture, Assistance to Returned Soldiers, Aid to Farmers, and other matters, which, although not returning direct revenue, have assisted in the development of the State.

With regard to the Commonwealth Debt, the War expenditure accounts for 89 per cent. of the total liability.

## LAW COURTS.

IN New South Wales legal processes may be grouped within the original jurisdiction of the Lower or Magistrates' Courts, or of the Higher Courts presided over by appointed Judges. There is also an appellate jurisdiction.

### LOWER COURTS.

The Lower or Magistrates' Courts include Petty Sessions, Small Debts, Licensing, Children's, Coroner's, and Fair Rents Courts.

All persons arrested and charged with offences at the various Police stations—also all summoned persons—must be brought before the Magistrates' Courts to answer charges, indictable or summary, or complaints of any nature; and are either dealt with summarily, or committed to take their trial at the Court of Quarter Sessions, or at the Supreme Court in its criminal jurisdiction. Persons may be committed also to take their trial at such higher Courts by a Coroner or by a Judge.

The First Offenders' (Women) Act, 1918, provides that when any woman of or above the age of sixteen years, who has not been previously convicted of any offence, is charged before any Court with a minor offence, the hearing shall be in private, unless the defendant elects to be tried in open court. Persons, other than those directly concerned, are not allowed to remain in the Court, and a report of the proceedings must not be published.

Certain indictable offences (larceny, stealing from the person, embezzlement, &c.) are punishable summarily by Magistrates—by consent of the accused person—if the subject matter of the charge, or value of the property involved, does not amount to £20. Persons convicted by the Magistrates under such circumstances are liable to imprisonment for six months, or to a fine of £20. The period of imprisonment that may be awarded by Magistrates for purely summary offences is fixed in each case by Statute; in some cases sentences up to two years may be imposed. Summary offences are punishable by fine, or by imprisonment; if the fine and costs are not paid the convicted person may be imprisoned, the periods of imprisonment ranging from a maximum of seven days, where the total amount payable does not exceed 10s., to a maximum of twelve months, where the amount exceeds £100.

If a person is sentenced to be imprisoned, while undergoing imprisonment for another offence, the Magistrate may order that the sentence for the subsequent offence shall commence at the termination of the period the person is then serving. Justices have no power to impose more than one sentence of imprisonment, to commence at the expiration of the first sentence.

By the Small Debts Recovery Act, 1912, the jurisdiction of Magistrates' Courts is extended to include action for the recovery of a debt or liquidated demand not exceeding £30, or where the Court is constituted by a Stipendiary or Police Magistrate sitting in some place appointed in that behalf by the Governor, to an amount not exceeding £50, whether on balance of account or after admitted set-off or otherwise.

### *Courts of Petty Sessions.*

Courts of Petty Sessions are held by Stipendiary Magistrates in the Sydney, Parramatta, Newcastle, Broken Hill, Bathurst, and Wollongong districts, and in other districts by Police Magistrates, or Justices of the Peace, the latter being honorary officers.

In the following table, which shows the number of offences charged at all Courts of Petty Sessions and Children's Courts during the last five years, all offences charged against any individual are included. It is not possible to determine the number of distinct persons charged owing to the difficulties attending their identification.

Courts.	1916.	1917.	1918.	1919.	1920.
Courts of Petty Sessions ...	77,873	63,872	65,589	67,092	76,743
Children's Courts ...	4,163	4,343	5,479	4,535	2,965
All Magistrates' Courts ...	82,036	68,215	71,068	71,627	79,708

The following table summarises the operations of these Courts during 1920 :—

Procedure.	Charged before Magistrates.	Treated Summarily.			Committed to Higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
By Arrest { Males ...	37,218	30,888	4,364	35,252	1,966
{ Females ...	4,299	3,651	507	4,158	141
By Summons { Males ...	35,604	28,627	6,866	35,493	111
{ Females ...	2,587	1,637	929	2,566	21
Total { Males ...	72,822	59,515	11,230	70,745	2,077
{ Females ...	6,886	5,288	1,436	6,724	162

The cases (2,239) committed to higher Courts represent 2·8 per cent. of the total charges; the remainder, representing 97·2 per cent., were summarily treated, convictions resulting from 83·7 per cent. of the charges. The charges against females numbered 6,886, being only 8·6 per cent. of the total.

The following table shows the proportion of summary convictions by Magistrates, of acquittals and discharges, and the committals to higher Courts at intervals since 1890 :—

Year.	Summary Convictions.	Acquittals and Discharges.	Committals to Higher Courts.
	per cent.	per cent.	per cent.
1890	80·4	16·0	3·6
1900	83·1	14·9	2·0
1910	86·1	12·3	1·6
1915	84·6	13·6	1·8
1920	81·3	15·9	2·8

Only a small proportion of the offences for which summary convictions were effected during 1920 were really criminal offences, that is offences against person or property. Following is a classification of summary convictions,

howing also their ratio to the general population, during each of the last five years :—

Year.	Against the Person.	Against Property.	Against Good Order.	Under Defence Act.	Other Offences.	Total Summary Convictions.
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## SUMMARY CONVICTIONS.

1916	1,785	4,480	37,407	2,383	22,560	68,615
1917	1,460	4,033	30,211	2,668	18,184	56,556
1918	1,542	4,805	27,109	3,064	21,489	58,009
1919	1,906	5,320	25,621	1,456	23,739	58,042
1920	1,925	5,772	30,261	1,636	25,209	64,803

## PER 1,000 OF MEAN POPULATION.

1916	·94	2·37	19·76	1·26	11·91	36·24
1917	·77	2·12	15·86	1·40	9·54	29·69
1918	·79	2·47	13·95	1·58	11·06	29·85
1919	·95	2·66	12·80	·73	11·86	29·00
1920	·93	2·79	14·63	·79	12·19	31·33

In many instances the offences shown under the heading of "Other" offences are committed in ignorance of the law, and are met with small or nominal penalties. For instance, during 1920 there were 4,015 cases under Local Government Acts; traffic regulations accounted for 4,620 cases, and 78 cases were for breaches of the Commonwealth Electoral Law.

Also included under the heading are a number of cases of drunkenness, in which the defendants took a pledge to abstain from intoxicating liquors, and numerous cases under the universal training section of the Defence Act in which offenders were transferred to the military authorities.

*Children's Courts.*

Children's Courts under the Neglected Children and Juvenile Offenders Act, 1905, were established throughout the State with the object of removing children as far as possible from the atmosphere of a public court. Magistrates exercise powers in respect of children and of offences committed by and against children. They possess also the authority of a Court of Petty Sessions or Justice under the Children's Protection Act, the Infant Protection Act, and the Deserted Wives and Children Act.

Offenders against the universal training section of the Defence Act are prosecuted in the Children's Courts as far as practicable; magistrates are empowered to fine or commit them to the custody of the military authorities.

The Neglected Children and Juvenile Offenders Act is designed to remove children from association with reputed thieves, and otherwise provides for the protection and reformation of neglected or uncontrollable children, also for the supervision of the children engaged in street-trading.

Information as to the number of licenses for street-trading, under the Neglected Children Act, and as to permits under the Children's Protection Act to take part in public exhibitions, at theatres, &c., will be found in the section of this work entitled "Social Condition."

During the year 1920 the charges investigated in Children's Courts numbered 2,965. In addition to these cases, there were 2,504 applications for orders relating to the disposal of neglected and uncontrollable children, and to the maintenance of children, and 1,604 cases of non-compliance with orders.

### *Small Debts Courts.*

The total number of cases dealt with by the Small Debts Courts during 1920 was 43,358; in only 871 cases was the amount claimed in excess of £30. The transactions during the last two years are shown in the following table:—

Transactions.	1919.			1920.		
	Up to £30	£30 to £50	Total.	Up to £30	£30 to £50	Total.
Cases brought before the Registrar—						
Judgments given for Plaintiff...	9,191	121	9,312	10,346	381	10,727
Not proceeded with ... ..	11,051	71	11,122	10,535	112	10,647
Verdicts given by Court—						
For Plaintiff ... ..	4,047	27	4,074	3,900	110	4,010
For Defendant ... ..	290	5	295	288	11	299
Withdrawn or struck out ...	6,700	31	6,731	8,364	126	8,490
Nonsuits ... ..	306	7	313	293	9	302
Cases pending... ..	6,164	32	6,196	8,761	122	8,883
Total Cases ... ..	37,749	294	38,043	42,487	871	43,358
Amount of Judgments for Plaintiff £	65,781	4,479	70,260	72,652	14,145	86,797
Amount of Verdicts for Plaintiff £	21,591	1,002	22,593	21,080	3,654	24,734

In garnishee cases the Court may order that all debts due by a garnishee to the defendant may be attached to meet a judgment debt, and by a subsequent order, may direct the garnishee to pay so much of the amount owing as will satisfy the judgment debt. In respect of wages or salary, garnishee orders may be made only for so much as exceeds £2 per week. The garnishee cases in 1920 numbered 1,710.

Oral examinations of judgment debtors as to debts due to them, ordered on the application of a judgment creditor, numbered 452 in 1920. Interpleader cases, as to claims made to goods held under a writ of execution, by a person not party to the suit, numbered 23.

### *Coroners' Courts.*

Under the Coroners Act, 1912, every stipendiary or police magistrate has the powers and duties of a coroner in all parts of the State, except the Metropolitan Police District, which is under the jurisdiction of the City Coroner.

Inquiries are held in all cases of violent or unnatural death; and, at the discretion of the Coroner, in cases of destruction or damage to property by fire; and on the evidence the Coroner is empowered to commit for trial persons judged guilty of manslaughter, murder, or arson.

The transactions of Coroners' Courts during 1920 resulted in 59 persons, 49 males and 10 females, being committed for trial to higher Courts; the offences charged being murder, 23 males and 8 females; manslaughter, 21 males and 1 female; arson, 5 males and 1 female.

Under the Coroner's Court Act, 1904, a Coroner may hold an inquest, sitting alone; but upon request of a relative, of the secretary of any society of which the deceased was a member, or on the order of the Minister of Justice, a jury of six is called. The number of deaths of which the causes were investigated by Coroners or Magistrates, during 1920, was 1,372—males 1,070, and females 302; the verdicts were that 1,044 deaths were caused by violence. The deaths of 595 males and 132 females were the results of accidents, and 206 males and 55 females were found to have committed suicide.

During 1920 inquiries were held into the origin of 99 fires; accident was ascribed as the cause in 11 cases, arson in 17, and carelessness in 1; in 70 instances there was insufficient evidence.

#### *Fair Rents Court.*

The first sitting of the Fair Rents Court established under the Fair Rents Act, 1915, was held in Sydney on 13th March, 1916. The function of the Court, which consists of a Stipendiary or Police Magistrate, is to determine the fair rental of dwellings valued at less than £156 per annum. The total applications made to the Court to 31st March, 1922, numbered 3,844, of which 1,474 were withdrawn or struck out; in 402 cases the rent was fixed as at the date of application, in 923 cases it was increased, and in 1,045 decreased. The applications to the Court during the year ended 31st March, 1922, numbered 1,108, of which 516 were withdrawn or struck out; in 81 cases the rent was fixed as at the date of application, in 255 increased, and in 256 decreased.

A full discussion of the constitution, functions, and operations of the Court will be found in the part of this work dealing with "Food and Prices."

#### *Licensing Courts.*

In the Metropolitan district the Court for granting licenses to sell intoxicants consists of three Stipendiary Magistrates, and in country districts of the local Police Magistrate and two specially-appointed Justices of the Peace; where there is no Police Magistrate resident within 10 miles of the Court-house a Licensing Magistrate may be appointed.

During 1920, 5,380 licenses were granted in connection with the sale of intoxicants, the fees collected amounting to £103,942. The particulars are as follow:—

Class of License.	Number.	Amount Collected.
		£
Publicans ... ..	2,517	89,199
Additional Bar ... ..	137	2,721
Club ... ..	77	1,105
Packet ... ..	13	130
Booth or Stand ... ..	1,959	3,918
Colonial Wine, Cider, and Perry ... ..	443	1,329
Brewers ... ..	17	5,540
Spirit Merchants ... ..	217	
Total ... ..	5,380	103,942



Information relating to other licenses issued by Magistrates will be found in the part of this work dealing with Social Condition.

### *Profiteering Prevention Court.*

The Profiteering Prevention Court was established under the Profiteering Prevention Act of 1920. The President and Judges of the Court are appointed from among the Judges of the Supreme Court, District Court, or Court of Industrial Arbitration. Under certain circumstances assessors possessing special expert or business knowledge may be appointed to assist the President and Judges of the Court. This Court is discussed further in the chapter of this volume treating "Food and Prices."

### DISTRICT COURTS.

District Courts are held for the trial of civil causes where the property involved or the amount claimed does not exceed £400, and in cases where a title to land not exceeding £200 in value is in question. These Courts are presided over by Judges, who also perform the duties of Chairmen of Quarter Sessions for the trial of prisoners, except those charged with capital crimes. District Courts are held during ten months of the year in the Metropolis, and three or four times a year in important country towns. The Judge is not usually assisted by a jury; but in cases where the amount in dispute exceeds £20, either of the parties, by giving notice to the Registrar of the Court, may have a jury consisting of four men, and under the Matrimonial Causes Act, 1899, twelve men. On questions of law, and in respect of admission or rejection of evidence, appeal lies to the Supreme Court. At the end of 1920 there were 60 District Courts in the State.

The several District Court Judges are also Chairmen of Courts of Quarter Sessions and Judges of the Court of Review within their respective districts, as well as Judges of the Court of Marine Inquiry.

Particulars of suits brought in District Courts during the last five years are given in the following table :—

Year.	Total Suits.	Causes Tried.		Causes Discontinued or Settled without hearing.	Judgment for Plaintiff by Default, Confession, or Agreement.	Causes referred to Arbitration.	Causes Pending and in Arrear.	Total Amount of Claims.	Court Costs of Suits.
		Verdict for Plaintiff.	Verdict for Defendant (including Non-suit, etc.).						
1916	6,126	440	195	1,655	2,266	7	1,563	£ 290,642	£ 21,072
1917	5,568	429	205	1,539	1,882	2	1,511	£ 274,646	£ 14,570
1918	5,572	388	214	1,605	1,837	5	1,523	£ 259,902	£ 18,253
1919	6,221	465	207	1,835	1,949	14	1,751	£ 333,539	£ 17,207
1920	7,083	537	228	1,989	2,183	3	2,143	£ 377,419	£ 23,140

Of the causes heard during 1920, only 98 were tried by jury. During the same period there were 23 appeals from judgments given in District Courts; there were 9 motions for new trials, of which one was granted. The amount of judgment for plaintiffs during the year was £130,579.

## COURTS OF MARINE INQUIRY.

A Court of Marine Inquiry is constituted of one or more District Court Judges, assisted by assessors appointed under the Navigation Act, who have power only to advise, and not to adjudicate, upon any matter before the Court.

Such a Court hears and determines inquiries as to wrecks, shipping casualties, charges of incompetency or misconduct of officers, and appeals and references under the Navigation Act. Inquiries held during 1920 numbered 12, of which 3 were as to collision, 3 grounding, 2 stranding, 2 foundering, 1 misconduct against officers, and 1 loss of vessel. The Courts found in 3 cases that blame was not attachable to any particular person; in 4 cases masters were found at fault, 3 certificates being suspended, and 1 cancelled; in 2 cases the masters were found in fault but cases not considered sufficiently serious to suspend certificate; and in 3 cases the Court was unable to say what was the cause of the casualty.

## INDUSTRIAL ARBITRATION.

The Court of Industrial Arbitration is a superior court, and a court of record, having jurisdiction and powers conferred on it by the Industrial Arbitration Act, 1912. There are four judges of the Industrial Court.

The Court or an Industrial Board exercising the jurisdiction under the Act is governed in its procedure and in its decisions by equity and good conscience, and is not bound to observe the rules of law governing the admissibility of evidence.

Particulars of the transactions of the Court will be found in the chapter relating to "Employment and Production."

## THE SUPREME COURT.

The Supreme Court of New South Wales, which was constituted under the Charter of Justice of 13th October, 1823, is under the presidency of the Chief Justice, who is assisted by not more than seven Puisne Judges.

The Court and its Judges have, in effect, the same jurisdiction as the Courts and Judges at Westminster had on 25th July, 1828, together with any additional jurisdiction conferred since that date by State, Federal, and Imperial legislation. The jurisdiction conferred upon the Court may be exercised by two, or more Judges in all cases unless otherwise provided, and in certain specified cases may be exercised by one Judge.

The Chief Justice and three Puisne Judges are engaged ordinarily in matters in the Common Law and Criminal jurisdictions, the other Judges attending to matters in the Equity, Bankruptcy, Probate, and Matrimonial Causes jurisdictions.

A Puisne Judge must be a barrister of at least five years' standing, and his commission is dependent upon his good behaviour, revocable only upon address of both Houses of the Legislature.

Any Judge of the District Court, or any barrister or solicitor of at least seven years' standing, may be appointed as Acting Judge for a period not exceeding six months.

The procedure and practice of the Court are defined by statute, or regulated by rules which may be made by any three or more Judges.

*Common Law Jurisdiction.*

Actions are tried usually before a judge and jury; but no jury is required where both parties consent to the cause being tried by a Judge alone, or where in accordance with the provisions of certain statutes the right to have a jury has been taken away. Ordinarily a jury consists of four persons, but

either party may require a jury of twelve. The jury find only as to the facts of the case, being bound by the ruling of the Judge on points of law. From the Court thus constituted appeal lies to the Full Court, sitting *in Banco*, which is composed generally of at least three of the Judges. The Chief Justice, or in his absence the senior Puisne Judge, presides over the Full Court, which gives its decision by majority. New trials may be granted where the Judge has erroneously admitted or rejected material evidence; where he has directed the jury wrongly on a point of law; where the verdict of the jury is clearly against evidence; or where, from some other cause, there has been a miscarriage of justice.

An appeal to the High Court may be made in cases where the amount involved exceeds £300, or, in any case, with the permission of the High Court.

Provision is made for appeal by a suitor to the Privy Council, subject to leave from the Supreme Court. The dispute must involve a minimum amount of £500. In other cases, application for leave to appeal must be made directly to the Privy Council.

The following table gives the number of causes set down and writs issued in the Supreme and Circuit Courts (Common Law Jurisdiction) during the last five years. The number of writs issued includes cases which were settled subsequently by the parties.

Particulars.	1916.	1917.	1918.	1919.	1920.
Causes Tried—					
Verdict for Plaintiff ... ..	120	102	114	127	175
„ Defendant ... ..	32	36	28	36	39
Jury Disagreed ... ..	1	...	...	...	2
Nonsuits ... ..	8	10	5	6	9
Total ... ..	161	148	147	169	225
Not proceeded with ... ..	104	77	95	91	151
Referred to Arbitration ... ..	2	3	2	1	7
Total Causes set down...	267	228	244	261	383
Writs Issued ... ..	2,677	2,304	2,486	2,987	3,515
Fees paid into Consolidated Revenue	£	£	£	£	£
Fund ... ..	8,675	7,925	8,276	10,514	13,221
Cost of Litigation—					
Brought in at ... ..	39,673	36,256	33,514	32,637	48,545
Taxed off ... ..	11,317	9,620	8,766	7,405	12,966
Amount Allowed... ..	28,356	26,636	24,748	25,232	35,579
Court Costs of Taxation... ..	596	538	449	510	719

The small number of causes set down for hearing in comparison with the number of writs issued indicates the extent to which judgment is obtained before trial or cases are settled out of Court.

The Commercial Causes Act, 1903, provided an expeditious method for the trial of commercial causes, which include matters relating to the ordinary transactions of merchants and traders, the construction of mercantile documents, affreightment, insurance, banking, and mercantile usages. The parties to a Supreme Court common law action may secure the Judge's order to have it brought upon the list of Commercial Causes, and from this order there can be no appeal. To secure speedy settlement in accordance with the aim of the Act the Judge is empowered to dispense with juries, pleadings, and technical rules of evidence, and with proofs of writing and documents, and to order inspections and admissions; he may also settle the issues for trial, and state a case on points of law for the Full Court.

*Equity Jurisdiction.*

The Equity Act, 1901, consolidated enactments relating to the practice procedure, and powers, of the Supreme Court in matters calling for equitable relief, including the appointment of guardians of infants and the administration of their estates. Equitable relief may be given on an originating summons in respect of the construction of wills, foreclosure of mortgages, disputes between vendor and purchaser, and matters of account and administration. When the Judge in Equity has the assistance of two other Judges, the decision of the majority has the effect of a Full Court decision. The Court, in making binding declarations of right, may call for the assistance of actuaries, engineers, merchants, or any other persons; has power to grant injunctions or specific performance, or to award damages in addition to or in place thereof; and exercises all the powers of the Common Law Jurisdiction of the Supreme Court in deciding legal rights which arise incidentally; also the Court may delegate investigations to the Master in Equity, who is also the Master in Lunacy. There is an appeal to the High Court or Privy Council as in the case of Common Law matters. On 31st December, 1920, the Master in Lunacy held Trust Funds amounting to £375,259. The following is a statement of the transactions in Equity jurisdiction during the last five years:—

Year.	Statements of Claims.	Statements of Defence.	Petitions.	Summonses.	Motions.	Decrees, Orders, and Certificates.
1916	180	107	84	132	152	980
1917	189	85	95	165	209	1,048
1918	191	103	62	149	125	1,172
1919	227	164	67	118	225	1,076
1920	160	71	35	81	126	485

The amount of Trust Funds invested under Equity Jurisdiction in 1920 was £645,260, the investments being made at interest rates ranging from 3 to 6 per cent.

*Probate Jurisdiction.*

The jurisdiction of the Supreme Court in respect of the estates of deceased persons is vested in and exercised by the Probate Judge, formal duties in the granting of probates and letters of administration being delegated to the Registrar of Probates, subject to right of appeal to the Judge. In estates of less value than £300 the intervention of a solicitor is unnecessary; in 1920 probate or letters of administration were granted for 386 such estates, valued at £108,201.

The number of probates and letters of administration granted by the Supreme Court in its testamentary jurisdiction for the last five years is shown in the following table; the figures include estates administered by the Public Trustee:—

Year.	Probates Granted.		Letters of Administration.		Total.	
	Number of Estates.	Value of Estates.	Number of Estates.	Value of Estates.	Number of Estates.	Value of Estates.
		£		£		£
1916	3,535	11,891,119	2,314	1,771,554	5,849	13,662,673
1917	6,036	12,583,840	2,083	1,477,852	8,119	14,061,692
1918	4,128	12,335,103	3,140	1,666,256	7,268	14,001,359
1919	4,428	16,819,772	3,265	1,241,091	7,693	18,060,863
1920	3,570	26,191,030	2,428	1,514,783	5,998	27,705,813

These figures represent the gross values of estates, inclusive of those not subject to duty.

*Bankruptcy Jurisdiction.*

Any person unable to meet his debts may surrender his estate for the benefit of his creditors, or the latter may apply for a compulsory sequestration under certain specified conditions, the case coming under the Bankruptcy Jurisdiction of the Supreme Court.

Certain of the powers vested in the Judge in Bankruptcy are delegated to the Registrar in Bankruptcy, and in country districts to Police Magistrates and Registrars of District Courts; but appeal from a decision of the Registrar, or of a District Registrar, lies to the Judge in Bankruptcy, who deals also with questions relating to priority of claims.

An official assignee is deputed by the Judge to manage the estates of insolvents. Operations in the Bankruptcy Court are discussed in detail in the chapter of this volume relating to Private Finance.

The sequestrations during the year 1920 numbered 289; according to Bankrupts' Statements of Affairs, the liabilities of the estates sequestrated amounted to £204,594, and the assets to £139,550, thus leaving a deficiency of £65,044.

The Court Fees paid to the Treasury were £4,192.

*Divorce and Matrimonial Causes Jurisdiction.*

The Supreme Court of New South Wales has jurisdiction in divorce, dating from the Matrimonial Causes Act, 1873, under which the principal grounds for divorce were adultery on the part of the wife, and adultery and cruelty on the part of the husband. The present law is contained in the Matrimonial Causes Act, 1899, under which jurisdiction is vested in the Supreme Court in respect of all causes, suits, and matters matrimonial, excepting in respect of marriage licenses. Dissolution of marriage may be granted on petition as under—

*Husband v. Wife.*—Adultery, desertion, or habitual drunkenness and neglect of domestic duties for three years; refusal to obey an order for restitution of conjugal rights; imprisonment for three years and upwards at date when petition is presented and under sentence for at least seven years; conviction for attempt to murder or to inflict grievous bodily harm; repeated assaults and cruel beatings during one year preceding the date of the filing of the petition.

*Wife v. Husband.*—Adultery, desertion, or habitual drunkenness, coupled with neglect to support or cruelty, for three years; refusal to obey an order for restitution of conjugal rights; imprisonment for three years and upwards at date when petition is presented and under sentence for at least seven years; imprisonment under frequent sentences aggregating three years, within five years preceding the presentation of the petition; conviction for attempt to murder or to inflict grievous bodily harm; repeated assaults and cruel beatings within one year of petition.

The petitioner must have been domiciled in the State at the time of instituting the suit, and in most cases must have been so domiciled for three years. No relief is, however, granted to a petitioner who has resorted to New South Wales for the purpose of instituting proceedings.

Judicial separation may be sought on grounds of cruelty or desertion without cause extending over two years, and nullity may be declared in cases of marriages which are void.

Suits may be instituted for the purpose of obtaining restitution of conjugal rights, and failure to comply with a decree made in such a suit constitutes desertion, upon which a suit for divorce may be brought. Marriages may be

declared null and void on the grounds that the respondent is incapable of consummating it, that the parties to the marriage are within the prohibited degrees of consanguinity, or that the parties are unable to contract a valid marriage. Such inability may arise from one of the parties being already married, having acted under duress, or being under marriage age.

The first Divorce Act in New South Wales was passed in 1873.

The following statement shows the divorces, judicial separations, and decrees of nullity of marriage granted in New South Wales in the last five years :—

Year.	Divorces.		Judicial Separation granted.	Nullity of Marriage.	
	Decrees <i>Nisi</i> .	Decrees Absolute.		Decrees <i>Nisi</i> .	Decrees Absolute.
1916	386	360	11	5	1
1917	434	380	13	5	3
1918	383	376	11	4	4
1919	618	420	7	5	7
1920	624	553	11	8	3

The following statement shows the sexes of petitioners for divorce in the cases of decrees made absolute during the past ten years :—

Year.	Petitions for Divorce.		Year.	Petitions for Divorce.	
	Husband.	Wife.		Husband.	Wife.
1911	64	142	1916	141	219
1912	116	227	1917	145	235
1913	129	184	1918	163	213
1914	127	171	1919	188	232
1915	138	220	1920	266	287

The majority of petitions for which decrees are made absolute are lodged by the wife, the proportion being approximately 59 made by the wife to 41 lodged by the husband.

In regard to judicial separations during the same period, 10 were granted on petition of the husband, and 89 on petition of the wife.

The grounds of suits in which decrees were made absolute during each year since 1916 were as follow :—

Ground of Suit.	1916.	1917.	1918.	1919.	1920.
Adultery ... ..	104	104	104	119	202
„ coupled with Bigamy, Cruelty, and Desertion ... ..	4	4	5	7	5
Cruelty and Repeated Assaults ... ..	1	1	2	1	3
„ „ Habitual Drunkenness ... ..	7	10	4	2	8
Desertion ... ..	199	208	188	248	255
Habitual Drunkenness and Neglect to Support ... ..	12	8	3	1	3
Habitual Drunkenness and Neglect of Domestic Duties ... ..	5	2	5	3	5
Imprisonment of Husband for Three Years ... ..	1	2	1	...	1
Non-compliance with Order for Restitution of Conjugal Rights ... ..	27	41	64	39	71
Total ... ..	359	380	376	420	553

As to the grounds in support of applications for divorce, the majority of petitions were made on issues of desertion, a lesser proportion including habitual drunkenness as a causative factor in the conditions upon which the application was based. The following statement shows the numbers of petitions based on desertion, drunkenness, and other grounds, during the six years, 1915-1920 :—

Year.	Causes based on—		Other.	All Causes.	Year.	Causes based on—		Other.	All Causes.
	Desertion.	Drunkenness				Desertion.	Drunkenness		
1915	227	13	118	358	1918	252	12	112	376
1916	226	24	109	359	1919	287	6	127	420
1917	249	20	111	380	1920	326	16	211	553

It will thus be seen that 68 per cent. of divorces granted are allowed on these two counts. In cases of judicial separations, cruelty and repeated assaults are prominent factors.

#### CRIMINAL JURISDICTION.

A Judge of the Supreme Court presides over the Central Criminal Court of Gaol Delivery held quarterly at Sydney, when all accused persons are tried by a jury of twelve, chosen by lot from the panel provided by the Sheriff. In capital cases the right to challenge, both by the Crown and by the accused, is limited to twenty jurors, except for cause shown; and in cases other than those in which the sentence of death may be imposed, whether felonies or misdemeanours, the number challenged may not exceed eight. At the close of the case for the prosecution, an accused person may give evidence on his own behalf without rendering himself liable to examination thereupon either by counsel for the Crown or by the Court, or make a statement in his defence. The Accused Persons Evidence Act, 1898, provides that it shall not be lawful to comment at the trial of any person upon the fact that he has refrained from giving evidence on oath on his own behalf. The verdict of the jury must be unanimous, and they may be detained until they give a verdict or are discharged by the Court. If no verdict is returned, the accused may be tried again before another jury.

#### *Quarter Sessions.*

The Courts of Quarter Sessions are held by Chairmen, who perform also the duties of Judges of the District Courts. There are six Chairmen of Quarter Sessions; two of these preside over the Courts in the Metropolitan district, and one each in the following districts:—Southern and Hunter, south-western, northern, and western. All offences, except those involving the capital penalty, are within the jurisdiction of the Court. On the trial of prisoners at Quarter Sessions, at the request of the prisoner's counsel, the Chairman must reserve questions of law for the consideration of the Supreme Court.

#### *Charges before Higher Courts.*

During the year 1920 there were 1,581 persons, viz., 1,455 men and 126 women, charged before the higher Courts of the State. The following table

shows the results in the cases of these accused persons for 1919 and 1920 in comparison. In cases where more than one offence was charged, the most serious offence only has been counted :—

Sex.	1919.			1920.		
	Charged.	Convicted.	Withdrawn, Discharged, &c.	Charged.	Convicted.	Withdrawn, Discharged, &c.
Males ... ..	999	692	307	1,455	956	499
Females ... ..	114	70	44	126	71	55
Total ... ..	1,113	762	351	1,581	1,027	554

Classifying accused persons according to the nature of the offences, it is found that, in cases both of males and females, offences against property are the most numerous. A statement is given below of the principal offences of the persons convicted in higher Courts :—

Offences.	1916.	1917.	1918.	1919.			1920.		
				Males.	Females.	Total.	Males.	Females.	Total.
Against the Person ... ..	129	163	117	130	20	150	157	12	169
Against Property ... ..	584	426	449	497	39	536	748	53	801
Forgery and Offences against the Currency ... ..	51	33	29	32	2	34	30	3	33
Against Good Order ... ..	4	3	1	6	2	8	4	2	6
Other Offences ... ..	47	36	26	27	7	34	17	1	18
Total ... ..	815	661	622	692	70	762	956	71	1,027

#### *Poor Persons' Legal Expenses.*

Under the Poor Prisoners' Defence Act, 1907, any person committed for trial for an indictable offence may apply for legal aid for his defence before the jury is sworn. If the judge or committing magistrate considers that the person is without adequate means, and that such legal aid should be supplied, the Attorney-General may arrange for the defence of the accused and for payment of expenses of all material witnesses.

The Poor Persons' Legal Remedies Act, 1918, authorises Judges to make rules regulating the practice and procedure, and the costs and fees payable in respect of proceedings to which poor persons are parties. Such proceedings may not be instituted without permission, and Judges to whom applications for permission are made are authorised to act as conciliators. The rules made under this Act do not apply to criminal proceedings.

#### HIGH COURT OF AUSTRALIA.

Under the Commonwealth Constitution Act, the judicial power of the Commonwealth, both in original and appellate jurisdiction is vested in the High Court of Australia. Its original jurisdiction extends to matters in which the Commonwealth is a party, or which lie between States or residents of States. Its appellate jurisdiction extends to the hearing and determination of appeals from all judgments, decrees, orders and sentences of any justice exercising the original jurisdiction of the High Court or any other Federal Court, or from judgments, &c., of the Supreme Court or any other Court of any State from which an appeal lay previously to the King in



Council. The judgment of the High Court, in all such cases, is final, subject to the right of the Privy Council to grant leave to appeal to it; its sittings are held in the capitals of the States, as may be necessary. Hitherto the majority of actions brought before the High Court have related to its appellate jurisdiction.

#### APPELLATE JURISDICTION.

Courts having Appellate Jurisdiction are the following:—Courts of Quarter Sessions, the Supreme Court, the Full Court, the High Court of Australia, and, finally, the Privy Council. A Court of Criminal Appeal was established in 1912.

##### *Courts of Quarter Sessions.*

The right of appeal from Courts of Petty Sessions to Courts of Quarter Sessions lies against all convictions or orders by Magistrates, excepting adjudication to imprisonment for failure to comply with an order for the payment of money, for the finding of sureties for entering into a recognisance or for giving security, and orders for the payment of wages and convictions for breaches of discipline under the Seamen's Act, 1898. The Appeal Court rehears the cases, deciding questions of fact as well as of law.

The results of appeals from Courts of Petty Sessions during the last five years are shown below:—

Year.	Not Concluded.	Conviction or Order.			Total.
		Confirmed.	Varied.	Quashed.	
1916	64	298	44	91	497
1917	93	305	34	106	538
1918	99	365	55	106	625
1919	105	312	39	139	595
1920	87	443	69	154	753

##### *Appeals to Supreme Court.*

In connection with appeals from Magistrates and Wardens' Courts, applications for prohibition or mandamus are made either to a Judge in Chambers, or to the Full Court; appeals from decisions of District Court Judges sitting in the Mining Appeal Court are made to the Supreme Court, and appeals by way of special case from Warden's Courts are determined by a Judge in Chambers.

During 1920, applications for writs of prohibition and mandamus numbered 36, of which 26 were to Judges in Chambers, and 10 to the Full Court. Writs granted were 18, viz., 4 of mandamus and 14 of prohibition.

The special cases numbered 23; decisions were sustained in 7 and reversed in 10 from the Magistrates' Courts, and 3 cases were not proceeded with. There were 3 appeals in land cases, 2 of which were sustained and in the other case the decision was reversed.

##### *Appeals to Full Court.*

In Common Law 25 cases were taken during 1920, all of which were civil cases, consisting of new trial motions; 9 were granted and 10 refused, and 6 were not proceeded with. There were no appeals in Equity. One appeal in Divorce was disallowed. There was 1 appeal in Bankruptcy which was sustained, and there were no appeals in Probate. Appeals from District Courts numbered 16, of which 5 were allowed, 9 refused, and 2 were not proceeded with.

*Court of Criminal Appeal.*

The Court of Criminal Appeal was established by the Criminal Appeal Act of 1912, which prescribes that the Supreme Court shall be the Court of Criminal Appeal, constituted by three or more Judges of the Supreme Court as the Chief Justice may direct. Any person convicted on indictment may appeal to the Court against his conviction (1) on any ground which involves a question of law alone, or (2) with the leave of the Court or upon the certificate of the judge of the court of trial, on any ground which involves a question of fact alone, or of mixed law and fact, or any other ground which appears to the Court to be sufficient. A convicted person may also, with the leave of the Court, appeal against the sentence passed on conviction; in such appeal the Court may quash the sentence and substitute another either more or less severe.

In addition to determining appeals in ordinary cases the Court has power, in special cases, to record a verdict and pass a sentence, in substitution for the verdict and sentence of the court of trial; it may also grant a new trial, either on its own motion or on application of the appellant.

The result of appeals during the last five years are shown hereunder:—

Year.	Applications to Judge.		Applications to Court.				Sentences Varied (included in Convictions Affirmed).
	Granted.	Refused.	Convictions.		New Trials Granted.	Total Cases.	
			Affirmed.	Quashed.			
1916	3	12	55	6	12	73	2
1917	1	8	62	4	3	69	2
1918	1	1	19	3	4	26	2
1919	...	...	19	3	...	22	2
1920	...	...	40	2	6	48	3

*Appeals to High Court of Australia.*

During 1920 appeals made from decisions of Judges of the Supreme Court of New South Wales were decided as follows:—In Equity, 4 allowed, 6 dismissed, and 2 settled; in Bankruptcy, 1 allowed; in Common Law, 1 allowed; and in Divorce 2 dismissed.

In addition, appeals from the Full Court of the Supreme Court of New South Wales numbered 18, of which 7 were allowed, 8 dismissed, including 2 cases in which leave was rescinded, and 3 settled. Of the 5 appeals from assessments under the Federal Land Tax Assessment, 3 were allowed, 1 dismissed, and 1 settled.

Twelve applications for leave to appeal from judgments of the Supreme Court of New South Wales were refused.

One appeal from a Magistrate exercising Federal Jurisdiction in New South Wales, was allowed.

*Appeals to Privy Council.*

During 1920 no application for leave to appeal to Privy Council were made and granted in Common Law; of the appeals heard, 1 was dismissed, and 1 not concluded. In Equity there was 1 application for leave to appeal, which was granted; no appeals were heard. There were no appeals in Admiralty.

## PUBLIC TRUST OFFICE.

On 1st January, 1914, the functions of the Curator of Intestate Estates were taken over by the Public Trustee, who may act as executor or trustee either by will or by appointment, also as agent or attorney.

The Public Trustee is not allowed to make profits, and the commission and fees chargeable against estates are arranged from time to time to produce an annual amount sufficient to defray working expenses. Special provision has been made for the deposit of wills with the Public Trustee, and transfers of property to him as Public Trustee are exempt from stamp duty.

In the following table is shown the business transacted at the Public Trust Office during the last five years:—

Particulars.	1917.	1918.	1919.	1920.	1921.*
New Estates Administered—					
As Administrator ...	3,187	4,353	1,599	1,256	1,024
As Executor or Trustee	101	135	78	82	74
As Attorney or Agent ...	27	37	12	3	3
	£	£	£	£	£
Amount Received ...	438,995	711,000	740,612	736,533	649,972
Amount Paid ...	413,641	601,878	644,566	710,884	687,668
Commission and Fees ...	13,789	16,378	18,036	20,145	26,994
Unclaimed Money—					
Paid into Treasury ...	7,056	4,814	7,375	7,070	2,985
Subsequently Claimed...	562	274	241	594	1,210

\*Year ended 30th June.

## SOLICITORS AND BARRISTERS.

A solicitor has the right of audience in all Courts of New South Wales. The Supreme Court may suspend or remove from the roll any solicitor who has been guilty of misconduct or malpractice.

At the end of 1921 there were 185 barristers practising in New South Wales, and the number of solicitors was 1,112; of the latter, 681 were in the Metropolis. One woman was admitted to the Bar in May, 1921.

## PATENTS, COPYRIGHTS, TRADE MARKS, AND DESIGNS.

The administration of the statutes relating to Patents, Copyrights, Trade Marks, and Designs, devolves upon the Federal authorities, and a patent granted under the Commonwealth law is thus afforded protection in all the States, and in the Territory of Papua, for fourteen years. The copyright in a book, the performing right in a dramatic or musical work, and the lecturing right in a lecture, continue for the author's life and fifty years after his death. The British Copyright Act, subject to certain modifications, is in force in the Commonwealth under the Copyright Act, 1912.

The registration of a trade-mark protects it for fourteen years, but may be renewed from time to time. An industrial design may be protected for five years, and the period extended to fifteen years, provided it is used in Australia within two years of registration.

Under the various Federal acts, arrangements may be made for the protection in other countries of patents, copyrights, trade-marks, and designs. In all cases the rights of holders under the legislation of a State were conserved.

The Patents Trade Marks and Designs Act, 1914–15, empowers the Minister to suspend the registration of any patent or trade-mark, the proprietor whereof is a subject of a State at war with the King; a large number of such registrations have been suspended in favour of the Minister for Trade and Customs, and other persons approved by the Attorney-General of the Commonwealth.

## POLICE AND PRISON SERVICES.

## POLICE FORCE.

In 1920 there were 652 police stations, and a force numbering 2,667 was maintained under the immediate control of an Inspector-General. The following statement shows the distribution of the establishment at 31st December, 1920:—

Classification.	Inspector Gen. and Superintendents.	In-spectors.	Ser-geants.	Con-stables.	De-TECTIVES.	Track-ers.	Total.
Police—General ... ..	12	62	549	1,911	...	33	2,567
Detective ... ..	1	2	21	19	1	...	44
Water ... ..	...	1	9	24	...	...	34
Traffic ... ..	2	...	5	15	...	...	22
Total ... ..	15	65	584	1,969	1	33	2,667

Four women special constables are included in the above, but four women attached to the police stations as searchers are excluded.

The Police Regulation (Superannuation) Act, provides that the age of retirement from the police force shall be 60 years, except in the case of the Inspector-General of Police. Under certain circumstances, however, any member of the force may be retained until he reaches the age of 65 years.

The following statement shows that the increases in the strength of the police establishment, exclusive of trackers, have not been proportionate to the extension of population; the ratio of one policeman to 640 inhabitants in 1906 has changed gradually, so that in 1920 the ratio was one policeman to 794 inhabitants:—

Year.	Police.*	Inhabitants to each Policeman.	Year.	Police.*	Inhabitants to each Policeman.
1896	1,874	682	1915	2,613	725
1901	2,172	635	1916	2,587	729
1906	2,342	640	1917	2,557	751
1911	2,487	684	1918	2,480	791
1912	2,554	700	1919	2,569	794
1913	2,582	715	1920	2,634	794
1914	2,627	716			

\* Exclusive of Trackers.

*Rates of Pay and Pensions.*

The salaries paid to the police are as follow:—Superintendents, £493 to £593 per annum; inspectors, £408 to £445 per annum; sergeants, 18s. 1d. to 20s. 1d. per day; constables, 14s. 7d. to 17s. 7d. per day.

In addition Officers not provided with quarters receive lodging allowances as follow:—Superintendents, £110 per annum; inspectors, £80 per annum.

Other ranks—married men, 2s. 6d. per day; single men, 1s. 6d. per day. A clothing allowance of £20 per annum is made to plain-clothes police in lieu of uniform.

A deduction of 4 per cent. is made on account of contributions to a Superannuation Fund. Pension and gratuity rights are as follow:—To police appointed before 1st February, 1907, with less than 15 years' service, a gratuity not exceeding one month's pay is payable for each year of service, and a further gratuity of a month's pay for each year of service after the tenth year; to officers with 15 years' and less than 20 years' service, a pension equal to half-pay, less 3 per cent., is payable; from 20 years' and less than 25 years' service, a pension equal to two-thirds, less 3 per cent.; from 25 years' and less than 30 years' service, a pension equal to three-quarters less 3 per cent.; and from 30 years and upwards, a pension equal to full pay, less 3 per cent. To officers appointed after 31st January, 1907, with less than 20 years' service, a gratuity not exceeding one month's pay for each year of service is payable; to officers with 20 years' service and upwards, a retiring allowance not exceeding one-fortieth of salary for each complete year of service, less 3 per cent., provided that such allowance shall not exceed three-quarters of salary, less 3 per cent.

#### REGULATION OF TRAFFIC.

In the Metropolitan district the Traffic Police inspect public vehicles, test taximeters, regulate and control the use of motor vehicles upon public streets, besides exercising a general control over all street traffic. The number of persons taken to hospitals by the police in the Metropolitan District as the result of accidents, or illness in the streets, was 1,262.

As regards the services of the police in cases of accident, it is of interest to note that of the total police force of 2,630 men, 625 held First Aid Certificates, and 309 held Life-saving Certificates.

#### Traffic Licenses.

The following table shows licenses granted for vehicles and drivers under the Metropolitan Traffic Act and the Motor Traffic Act during the years 1919 and 1920:—

License.	1919.	1920.	License.	1919.	1920.
Metropolitan Traffic Act—			Metrop. Traffic Act— <i>etd.</i>		
Horse Cab ... ..	666	650	Motor-van Driver ...	192	344
Motor Cab ... ..	389	417	Horse-bus Driver ...	26	21
Horse Van ... ..	1,536	1,627	Motor-bus Driver ...	270	354
Motor Van ... ..	131	250			
Horse Omnibus ... ..	22	12	Motor Traffic Act—		
Motor Omnibus ... ..	148	149	Motor Vehicle ... ..	25,197	29,100
Horse-cab Driver ...	821	755	Motor Vehicle Driver ...	41,349	47,805
Motor-cab Driver ...	556	619	Motor Cycle ... ..	10,236	10,991
Horse-van Driver ...	1,790	1,874	Motor Cycle Rider ...	15,063	16,059

The revenue obtained under the Metropolitan Traffic Act was £4,320 in 1919 and £4,610 in 1920; under the Motor Traffic Act £41,176 in 1919, and £47,144 in 1920; and under the Motor Vehicles (Taxation) Act £101,414 in 1919, and £117,984 in 1920.

## PRISONS.

*Grading of Establishments.*

The prison establishments are graded with a view to the concentration of prison population in institutions large enough to ensure efficiency of supervision with economy of administration, and the maintenance of a strict and disciplinary organisation conducive to the highest ideals of reform.

The State Reformatory for Women at Long Bay is occupied by prisoners of all classes, and the State Penitentiary for Men at Long Bay is used as a place of detention for incapables from the city, and as a centre from which long-sentence prisoners are distributed to the principal country establishments; while at the police gaols and lock-ups are detained only prisoners with sentences of less than fourteen days. The Prisoners' Afforestation Camp, Tuncurry, receives selected prisoners (first offenders) after portion of their sentence has been served; and at the Emu Plains Prison Farm, young industrious prisoners, with suitable qualifications are treated on somewhat similar lines.

*Classification of Prisoners.*

In all the large establishments an inter-classification system is operative, which assures the segregation of the inmates in various classes as to age and conduct.

For several years the principle of restricted association has been in operation, and has yielded results which demonstrate its success. Under present conditions association while at work, at exercise, and at religious instruction, is subject to the closest supervision. Cells are lighted, and literature is provided from the prison libraries.

## PRISON POPULATION.

At the end of 1920 there were 24 gaols in New South Wales; of these, 5 were principal, 8 minor, and 11 police gaols. The police gaols at Armidale and Newcastle have been closed.

Altogether since 1901, when there were 59 gaols, 40 have been closed, and 5 opened.

The number of prisoners in gaol, exclusive of inebriates, at the close of each year, during the last five years, will be found below :—

Year.	Under Sentence.		Awaiting Trial.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
1916	1,251	209	64	10	1,315	210	1,525
1917	1,154	138	81	4	1,235	142	1,377
1918	854	105	59	7	913	112	1,025
1919	835	60	85	6	920	66	986
1920	1,056	72	111	9	1,167	81	1,248

The following comparison shows that though the general population has more than trebled since 1875, the gaol population has decreased by 14 per cent.

The gaol entries shown in the table, some of whom were received and counted several times, represent convicted persons, persons awaiting trial, debtors, naval and military offenders, and persons on remand.

Year.	General Population at 31st December.	Gaol Entries during Year.	Gaol Population at 31st December.	
			Number.	Per 1,000 of General Population.
1875	594,297	11,832	1,453	2.44
1885	949,570	20,740	2,562	2.70
1895	1,262,270	18,552	2,460	1.95
1905	1,469,153	13,380	1,678	1.14
1910	1,638,220	9,849	1,323*	.81
1920	2,092,345	8,784	1,248*	.60

\* Exclusive of inebriates detained.

### *Prisoners Released on License.*

Persons eligible for remission of sentence for good conduct and industry may be released on license to be of good behaviour.

Licenses operate for the unexpired portion of the sentence and sureties are required. The licensee is required to report periodically, and a breach of the conditions of release may be punished by the cancellation of the license, and recommitment to gaol for the balance of the sentence. During 1920, licenses were granted under Prisons Regulation No. 75, to 298 men and 5 women, and under the Crimes Act to 125 men and 12 women.

### *Imprisonment in Lieu of Fine.*

Imprisonment for non-payment of an amount adjudged to be paid on order of a Justice may be curtailed by payment of a portion of the fine, for which a proportionate part of the sentence may be remitted, and provision is made for the payment of fines in instalments. The following table shows the extent to which diminution in the term of confinement was commuted by money payment during the past five years:—

	1916.	1917.	1918.	1919.	1920.
Persons committed to gaol in default of payment of fines ... ..	4,403	3,732	3,637	3,076	3,724
Prisoners subsequently released after paying portion of fines ... ..	1,082	876	709	801	781
Days prisoners would have served if portion of fines had not been paid ...	47,824	27,322	21,910	21,791	27,017
Days remitted by part-payment of fines ...	23,054	17,864	14,590	12,543	16,602
Amount received at gaol as part-payment of fines ... .. £	2,721	2,253	2,039	2,484	2,721

*Capital Punishment.*

The following table shows the total number of death sentences pronounced and sentences of death recorded; also executions during the years 1915-20 :—

Year.	Death Sentences Pronounced and Sentences of Death Recorded.	Executions.	Year.	Death Sentences Pronounced and Sentences of Death Recorded.	Executions.
1915	9	...	1918	4	...
1916	5	2	1919	3	...
1917	8	2	1920	14	...

*Industrial Activity in Prison Establishments.*

Ability to perform useful and remunerative labour is recognised as of equal importance with good conduct in demonstrating fitness for freedom; and, to encourage some degree of skill, employment at industries calculated to inspire interest, and subsequently to prove remunerative, is provided under the supervision of competent instructors.

In 1920 the value of prisoners' labour amounted to £52,543, viz. :—manufactures for gaols, £14,260; and for other Government departments, £13,807; in buildings, £6,821; domestic employment, £17,604; and other employment, £51.

## SICKNESS AND MORTALITY IN GAOLS.

Visiting surgeons are attached to the various important establishments of which the sanitation and hygiene are on modern lines. Among the persons received into the institutions are included many whose physical condition is deplorable, persons in the last stages of disease, and aged and infirm persons, for whom a hospital or asylum is the befitting destination. Prisoners suffering from tuberculosis receive special treatment.

The medical statistics of prisons show that, with an average daily number of 1,090 inmates during 1920, the total number of cases of sickness treated in hospital was 431; 3 prisoners died, including 1 male who died in District Hospital, and 24 were released on medical grounds. The death rate per 1,000 of the average number of inmates was 2·7.

## LOCK HOSPITALS.

Under the Prisoners Detention Act, 1908, prisoners found to be suffering from certain contagious diseases may be detained in Lock Hospitals attached to the gaols. In cases of imprisonment without option of fine, a stipendiary magistrate may cause the prisoner to be detained until certified by the medical officer as free from disease even after the definite sentence is served; but in the case of imprisonment in lieu of payment of a fine, the Act did not provide for detention beyond the specified term of imprisonment. In 1918, however, an Act was passed to remedy this defect, and all such prisoners may now be treated in the Lock Hospitals until free from contagion.

During 1920 orders for detention in the Lock Hospitals were obtained in the cases of 81 men and 19 women, and, in addition, treatment was given to 37 men and 4 women, for whom orders were not obtained; 13 men were discharged uncured.



### SPECIAL TREATMENT.

Upon the recommendation of the Judge before whom they have been tried, prisoners convicted of a misdemeanour under sentence of imprisonment without hard labour may be placed in a special class and treated similarly to those confined under civil process. Such prisoners are segregated and are allowed privileges regarding food, clothing, &c.

#### *First Offenders.*

When any person, not previously convicted of an indictable offence is convicted for a minor offence and sentenced, the Court may suspend the sentence upon a recognisance, without sureties, for good behaviour during the period covered by the sentence, the probationary term being, however, not less than one year. An examination is made for purposes of identification, and the offender is required to report himself periodically. If his conduct be not satisfactory he becomes liable to imprisonment for the unexpired portion of the sentence; but good behaviour during the whole probationary period will cancel the conviction.

During 1920 there were 458 persons, viz.:—241 at Magistrates', and 217 at higher courts, released as first offenders; of these, 395 were men and 63 women. These figures do not include children released on probation from the Children's Court under the Neglected Children and Juvenile Offenders Act, 1905.

The records of 808 persons convicted at the higher courts during 1920 show that 390 had not been convicted previously.

At Goulburn Gaol special reformatory treatment is provided for first offenders—useful employment, educational facilities, physical drill, and strict classification in order to prevent the association of prisoners of vicious tendencies. That this plan is an important factor in the deterrent influence of the prison system, is evinced by the small proportion of re-convictions of prisoners passing through the treatment.

#### *Youthful Offenders.*

In New South Wales a strict line of demarcation is drawn between offenders over and under the age of 25 years. Offenders under age 25 are classified in age-groups; also according to length of sentence over or under 12 months, and divisional treatment is accorded. Special disciplinary, scholastic, religious, physical training, and industrial courses are provided, for the last of which facilities in the form of workshops are available. Great discrimination and special care are necessary to prevent such youthful offenders from becoming confirmed criminals.

#### *Maintenance Confinees.*

The Deserted Wives and Children Amending Act, 1913, empowers the Comptroller-General of Prisons to direct a prisoner committed to prison under the Deserted Wives and Children Act, 1901, or the Infant Protection Act, 1904, to perform any specified class of work. An estimate is made of the value of the work performed, and after a deduction for the prisoner's keep, the remainder is applied towards satisfaction of the order for maintenance under the Deserted Wives and Children Act 1901, or for maintenance or expenses under the Infant Protection Act, 1904.

During 1920 the number of maintenance confinees received into gaol was 270, as compared with 223 in the previous year.

#### WOMEN IN PRISONS.

In August, 1909, the State Reformatory for Women was opened at Long Bay, and to this central institution are sent all prisoners from the metropolitan district, and all long-sentence prisoners from extra-metropolitan

districts. At Long Bay an exhaustive system of classification is in force, accommodation being provided by means of 290 separate rooms.

During 1920 1,319 women were received in Long Bay, the number remaining at end of the year being 68.

The industrial activity of the institution resulted in an output of manufactures, which, with the work of gardening and domestic services, was valued at £1,630. During 1920 the daily average at the Long Bay State Reformatory for Women was 83.

In 1920, at all gaols of New South Wales, 1,087 female prisoners were received under sentence, the daily average number, including untried prisoners, being 89.

Approximately 77 per cent. of the women received at all gaols were committed on sentences of one month and less, and consequently presented little opportunity for the application of reformatory measures.

#### HABITUAL CRIMINALS AND PREVENTIVE DETENTION.

The Habitual Criminals Act, 1905, empowers a judge to declare as an habitual criminal any person convicted for the third or, in some cases, the fourth time, on account of certain criminal offences, as specified in the Act. A definite sentence is served on account of the offence charged, and subsequently the offender is detained for an indefinite term, until he is deemed fit for freedom.

This system of treatment acts as a deterrent to the existence of professional criminals, and moreover confers an incalculable benefit on society by removing the force of example of criminality. The benefits accruing from the system of indeterminate sentences, as initiated in New South Wales, have led to its adoption in other communities.

Two men were declared to be habitual criminals during 1920—making a total of 83 men and 1 woman so declared since the inception of the Act. Of this number, 42 men and 1 woman were released on probation, 6 being recommitted to gaol, 5 died, 7 were released on medical grounds, 3 were removed to the Hospital for Criminal Insane, and in 7 cases the declaration of an habitual criminal was remitted. At the end of 1920 there were under detention 11 men who had not yet completed the definite period, and 16 men who had passed into the indeterminate stage.

On the completion of the definite term under the ordinary prison regulations, the habitual criminal passes to the indeterminate stage, which is divided into three grades—intermediate, higher, and special; a minimum period of 4 years and 8 months must be spent in the lower grades before the prisoner can gain admission to the special grade, wherein cases may be brought under consideration with a view to release. At the end of 1920 10 prisoners were in the intermediate grade, 5 were in the higher grade, and 1 in the special grade.

An important proviso of the Habitual Criminals Act prescribes that while under detention as an habitual criminal every prisoner must work at some useful trade, and receive at least one-half of the proceeds of his work. As the majority of these persons have not been trained in any branch of skilled labour, facilities are afforded them, while serving the definite term, to acquire training in some remunerative employment.

#### DRUNKENNESS.

During 1920 the total convictions for drunkenness numbered 16,081. The following table shows the total convictions—that is cases in which convictions were recorded, not distinct persons convicted—during each of the

last ten years, and their ratio to the mean population. In September, 1916, a new method of dealing with persons charged with drunkenness was adopted in the Metropolitan police district. Such persons may now be released upon depositing an amount equal to the usual penalty imposed, and in the event of non-appearance at the Court the deposits are forfeited and no further action is taken. In 1919 there were 6,437 cases (5,923 men and 514 women), and in 1920, 9,762 cases (9,029 men and 733 women) in which bail was estreated. These have been excluded from the table.

Year.	Total Convictions.			Convictions per 1,000 of—		
	Males.	Females.	Total.	Male Population.	Female Population.	Total
1911	26,295	3,004	29,299	30.28	3.77	17.59
1912	29,264	3,456	32,720	31.90	4.18	18.76
1913	29,153	3,314	32,467	30.37	3.85	17.84
1914	30,135	3,073	33,208	30.60	3.47	17.76
1915	23,224	2,639	25,863	23.69	2.90	13.68
1916	20,579	2,438	23,017	21.38	2.62	12.16
1917	15,421	2,038	17,459	16.19	2.14	9.17
1918	13,016	1,712	14,728	13.37	1.77	7.58
1919	11,820	1,289	13,109	11.64	1.31	6.55
1920	14,527	1,554	16,081	13.75	1.54	7.78

It will be seen that there has been a decided decrease in the convictions of women; this has been most marked in the years immediately succeeding the enactment of the Liquor Amendment Act of 1905, and the establishment of State institutions for treatment of inebriates in 1907. There is no doubt that the proportions have been appreciably lowered by the detention of women who, though few in number, swelled the record of cases by repeated convictions on the charge of drunkenness.

With regard to the men, the rate in 1919, viz., 11.64 per 1,000, was the lowest during the period.

#### *The Treatment of Inebriates.*

The Inebriates Act was designed to provide treatment for two classes of inebriates—those who have been convicted of an offence, and those who have not in this way come under the cognisance of the law.

For the care and treatment of the latter class, the Act authorises the establishment of State institutions under the control of the Inspector-General of Insane. Judges, police magistrates, and the Master-in-Lunacy may order that an inebriate be bound over to abstain, or that he be placed in a State or licensed institution, or under the care of an attendant controlled by the Master-in-Lunacy, or of a guardian, for a period not exceeding twelve months. Provision is made also to enable an inebriate to enter voluntarily into recognisances to abstain.

An inebriate convicted of an offence of which drunkenness is a factor, or, in certain cases, a contributing cause, may be required to enter into recognisances for a period not less than twelve months, during which he must report periodically to the police; or he may be placed in a State institution under the direction of the Comptroller-General of Prisons.

Special provision has been made at the State Penitentiary for men, and at the State Reformatory for women, detained under the Inebriates Act, who have been convicted previously for other offences; since March, 1915, those of the non-criminal class have been treated at a separate establishment, the Shaftesbury Inebriate Institution.

In 1917 arrangements were made for the admission of voluntary paying patients to the Shaftesbury Institution; these patients may, under certain conditions, leave the institution daily to follow their usual occupation. During 1920, 25 men and 4 women were admitted as voluntary patients, and 5 men and 2 women were remaining on 31st December.

#### *State Inebriate Institutions.*

The power of detaining inebriates in State Institutions was first exercised in 1907, and the majority of admissions have been of chronic offenders over 40 years of age, who for many years prior to admission had served frequent sentences under the repeated short sentence system, and who in consequence had drifted into a condition from which reformation seemed almost hopeless. In view of this fact the results attained by the operation of the Acts may be considered encouraging.

During the period dating from the first reception in August, 1907, to 31st December, 1920, the total number of original receptions amounted to 949—408 men and 541 women; 1,248 licenses for release were issued—464 to men, and 784 to women; 163 issued to men, and 327 to women, have been cancelled, and the licensees recommitted to institutions.

At the beginning of the year 1920 there were, exclusive of voluntary patients, 46 persons in custody at the inebriate institutions; 104 were received during the year, 1 was discharged, 93 were released on license, 1 absconded while on parole, leaving 55 at the end of the year.

Of the 93 persons released on license during 1920 from the institutions, 36 obtained employment, 30 were admitted to homes, 1 to hospital, and 26 were released to care of friends.

The total expenditure on inebriate institutions during the year amounted to £3,300.

#### FUGITIVE OFFENDERS AND EXTRADITION.

The Imperial statutes in force in New South Wales for the surrender of fugitive criminals are the Fugitive Offenders Act, 1881, and the Extradition Act.

Under the Fugitive Offenders Act, 1881, provision is made for the surrender from the United Kingdom to a British possession or *vice versa*, or from one British possession to another, of fugitives charged with the perpetration of crimes which, in the part of His Majesty's dominions where they are committed, are punishable by a minimum penalty of imprisonment with hard labour for twelve months. Persons apprehended under this Act are brought before a Magistrates' Court, and their cases are included in the figures relating to the business transacted at such courts.

During 1920, 24 males were arrested in other countries as fugitive offenders, and returned to New South Wales. Of these 8 were discharged, 2 were summarily convicted, and 7 were committed to higher courts; in 1 case a maintenance order was made, and the remaining cases were otherwise treated.

The number of persons arrested in New South Wales during 1920 as fugitives from other parts of the British Empire was 36, of whom 33 were males and 3 females. Of the total, 31 were remanded to other States of the Commonwealth, 3 to New Zealand, and 2 to South Africa.

The Extradition Act provides for the surrender to foreign States of persons accused or convicted of committing crimes within the jurisdiction of such States, and for the trial of criminals surrendered to British dominions. Treaties for the extradition of fugitives subsist between the United Kingdom and the majority of foreign countries. In proceedings taken in New South Wales under the Extradition Act the fugitive may be brought before a Stipendiary or Police or Special Magistrate, who hears evidence on oath, and, if satisfied, makes out a warrant for the extradition. At the hearing, the Consul for the country of which the person charged is a subject, the Crown Solicitor, and the Inspector-General of Police are represented. If a warrant be granted, the prisoner is detained for fifteen days prior to extradition, during which interval he may apply to the Supreme Court for a writ of *habeas corpus*. There were no extraditions to foreign countries during 1920.

#### COST OF ADMINISTRATION OF JUSTICE.

The following table shows the amount expended in the administration of justice, and in the protection of property and punishment of criminals, in New South Wales during the last five years; also the amount of fines and fees paid into the Consolidated Revenue, and net returns from prisoners' labour:—

Expenditure and Revenue.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	£	£	£	£	£
<b>Expenditure—</b>					
<b>Law Administration—</b>					
Judicial Salaries and Pensions...	53,262	52,935	52,368	53,870	59,106
Department of Attorney-General and of Justice† ...	225,445	221,609	225,121	232,176	288,742
	278,707	274,544	277,489	286,046	347,848
<b>Police—</b>					
Administration ..	600,369	645,622	645,828	898,239	1,020,804
Rewards ...	2,232	900	1,127	1,995	100
Other* ...	47,000	63,000	72,000	77,000	80,000
	649,601	709,522	718,955	977,234	1,100,904
<b>Prisons ...</b>	91,913	90,570	87,875	92,781	113,882
<b>Total Expenditure ...</b>	1,020,221	1,074,636	1,084,319	1,356,061	1,562,634
<b>Revenue—</b>					
Fees ...	60,397	66,508	69,174	81,318	100,188
Fines and Forfeitures ...	31,234	31,055	35,280	38,785	45,303
Value of Prisoners' Labour ...	754	705	499	410	660
<b>Total Revenue ...</b>	92,385	98,268	104,953	120,513	146,151
<b>Net Cost ...</b>	927,836	976,368	979,366	1,235,548	1,416,483
<b>Per Head of Mean Population—</b>	s. d.	s. d.	s. d.	s. d.	s. d.
Police ...	6 10	7 5	7 4	9 7	10 7
Law Administration ...	2 0	1 10	1 9	1 8	1 11
Prisons ...	1 0	0 11	0 11	0 11	1 1

\* Payments made to the Police Pension Fund under the Police Regulation (Superannuation) Act (No. 28 of 1906). † Excluding Public Service Board, Prisons, and Registrar-General's Department, and certain other items of expenditure.

## COMMERCE.

Power to make laws with respect to trade and commerce with other countries and between the States was vested in the Commonwealth Parliament, and control of the Customs and Excise Department was transferred to the Commonwealth in the year 1901. Following on alterations in the financial arrangements between the Commonwealth and the States, the Federal Government ceased to collect particulars of the interstate trade from 13th September, 1910; consequently the figures shown in this chapter relate only to oversea trade—that is, to the trade of New South Wales with countries beyond Australia.

The Customs Act of 1901 provided the necessary machinery to administer matters relating to Customs, and prescribed the manner in which duties were to be computed and paid. The Customs (Inter-State Accounts) Act, 1910, repealed the sections of the Customs Act, 1901, which necessitated the keeping of accounts of dutiable goods passing between the States. The Act assigned to the Customs Department control over all goods for export, and, subject to restrictions under any enactment, extended the provisions of earlier Acts in regard to prohibited goods, payments of duty, weight and measurement, &c. It provided also for supervision of preparation or manufacture for export of articles used for or with food or drink for human consumption, and established conditions as to the purity and soundness of goods designed for export.

Prior to the 16th December, 1921, various Customs Tariff Acts were in operation, but with the exception of the Customs Act, 1901–20, they were repealed by the Customs Tariff, 1921. The duties under this tariff were deemed to have been imposed on the 25th March, 1920.

There are three Tariff Rates:—British Preferential, Intermediate, and General. The first applies to goods the produce or manufacture of the United Kingdom, but its provisions may be applied wholly or in part to any part of the British Dominions. The Intermediate Tariff may be applied to any part of the British Dominions, or to any foreign country.

In the 1911 Tariff, Great Britain received preference on 251 items, and in the 1914 tariff, on 310 items, ranging from 5 to 10 per cent.—in most cases the 5 per cent. rate prevailed, while under the 1921 tariff, Great Britain receives preference on 357 items, ranging from 5 to 20 per cent.

For the further protection of local industries, the Customs Tariff (Industries Preservation) Act, 1921, was passed. The Act gives the Minister power to impose a dumping duty in cases where, after inquiry by the Tariff Board, it has been found that goods have been sold to an importer in Australia at an export price less than their fair market value at the time of shipment, also upon goods carried in subsidised ships at less than the prevailing rates of freight or at ballast rates of freight.

Under the Tariff Board Act, 1921, a Board has been appointed to deal with matters such as the classification of goods; determination of value; disputes; new, increased, or reduced duties; bounties; application of

British Preferential Tariff or Intermediate Tariff to any part of the British Dominions or any foreign country; complaints that a manufacturer is taking undue advantage of the tariff by charging unnecessarily high prices, or restricting trade, &c., &c.

The value of goods imported, as shown in the tables throughout this section, represents the amount on which duty is payable, or would be payable if the duty were *ad valorem*. The value of goods subject to duty is taken to be the fair market value in the principal markets of the country whence exported, plus 10 per cent. to cover the cost of packing, insurance, freight, and all other charges. The value of goods exported is the value in the principal markets of the State.

### IMPORTS AND EXPORTS.

The total values of oversea imports and exports and the values per head of population for each year since 1911, are quoted below:—

Year ended 30th June.	Imports.	Exports.	Per head of Population.		
			Imports.	Exports.	Total Oversea Trade.
	£	£	£ s. d.	£ s. d.	£ s. d.
1911*	27,343,423	32,161,401	16 8 7	19 6 5	35 15 0
1912*	32,303,630	32,958,529	18 10 6	18 17 11	37 8 5
1913*	32,350,663	32,839,789	17 15 6	18 0 10	35 16 4
1914†	16,677,336	15,738,313	9 0 7	8 10 5	17 11 0
1915	27,323,243	28,107,025	14 10 1	14 18 4	29 8 5
1916	33,379,698	40,975,416	17 12 6	21 12 7	39 5 1
1917	32,742,297	50,290,824	17 5 9	26 11 1	43 16 10
1918	29,519,986	39,619,093	15 7 0	20 11 11	35 18 11
1919	46,013,102	51,027,359	23 8 0	25 19 0	49 7 0
1920	44,690,599	55,017,065	21 18 7	26 19 11	48 18 6
1921	72,466,338	52,601,806	34 13 7	25 3 5	59 17 0

\* Year ended 31st December.

† Half-year ended 30th June.

The rates for the years 1912 to 1920 inclusive, have been revised since last publication, in accordance with Census 1921 adjusted figures.

The value of the exports from year to year in normal times forms a sure index of the progress of this country; the result of a rise or fall in the value of the staple commodities, or of a depression in production, being readily traceable in the corresponding rise or fall in the export values.

Difficulty in connection with freights on account of war conditions was a disturbing factor in trade during the years 1914 to 1919.

The following table shows the chief countries from which New South Wales imported goods, also those to which goods were exported:—

Country.	Imports.		Exports.	
	1913.	1920-21.	1913.	1920-21.
	£	£	£	£
United Kingdom ... ..	18,107,138	36,213,537	11,904,424	20,650,150
Canada ... ..	675,502	2,209,126	145,875	125,242
Ceylon ... ..	440,467	418,530	170,651	85,840
Egypt ... ..	...	12,256	...	576,273
Fiji ... ..	403,623	263,416	379,476	636,934
Hong Kong... ..	165,664	344,559	553,740	439,881
India ... ..	1,175,707	2,748,872	220,260	478,683
New Zealand ... ..	1,632,184	1,195,026	1,321,989	4,797,519
Papua ... ..	80,012	237,653	97,243	249,289
South African Customs Union ...	53,350	168,907	339,207	463,902
South Sea Islands... ..	17,250	406,799	34,804	658,100
Straits Settlements ... ..	153,791	822,291	467,796	681,754
Bismarck Archipelago ... ..	...	729,556	...	538,954
Other British Possessions... ..	6,491	75,159	30,593	365,715
British Ports (for Orders) ... ..	...	...	...	1,137,526
Total, British Countries £	22,911,179	45,845,667	15,666,058	31,865,762
Belgium ... ..	1,078,518	510,110	2,769,661	2,732,907
Bismarck Archipelago ... ..	1,659	...	65,091	...
China ... ..	41,655	134,399	114,121	114,619
Cuba ... ..	1,642	1,651,194	2	...
Egypt ... ..	12,028	...	48,098	...
France ... ..	310,050	117,319	4,649,474	2,655,324
Germany ... ..	1,880,042	1,295	3,659,676	628,101
Italy... ..	198,876	312,859	510,433	795,299
Japan (inc'uding Formosa) ... ..	464,057	2,584,243	1,113,915	2,147,212
Netherlands ... ..	104,996	107,081	99,261	409,503
Netherlands East Indies ... ..	292,044	2,056,253	396,688	1,095,575
New Caledonia ... ..	33,184	120,255	144,107	411,265
Philippine Islands... ..	51,281	88,095	192,675	235,354
United States of America ... ..	4,251,541	16,831,890	1,831,470	7,368,469
South Sea Islands ... ..	143,992	33,743	396,685	162,707
Sweden ... ..	279,059	1,119,285	4,825	98,687
Other Foreign Countries ... ..	294,860	952,700	1,177,549	1,056,950
Foreign Ports (for Orders) ... ..	...	...	...	824,072
Total, Foreign Countries £	9,439,484	26,620,721	17,173,731	20,736,044
Total, all Countries ... ..	£ 32,350,663	72,466,388	32,839,789	52,601,806

The table shows very clearly the extent to which the trade with various countries has been affected by the war. Trade with Germany, as regards imports, has practically ceased, while there has been an enormous development of trade with the United States and Japan, and the trade with the Netherlands and Netherlands East Indies has assumed important dimensions.

#### DISTRIBUTION OF TRADE.

Of oversea imports in 1921, according to country of origin, 57 per cent. were of British manufacture or production. Approximately 50 per cent. of the total imports were shipped from the United Kingdom, 13 per cent. from British possessions, or a total of 63 per cent. from British countries, the difference in favour of British shipments as against those of foreign countries being attributable to the advantages of Great Britain as



a transshipping country. The imports shipped from foreign countries direct represented 37 per cent. of the total. Of the exports from New South Wales, 61 per cent. were shipped to British countries, while of the total trade, 62 per cent. was British.

The trade of the State is greater with the United Kingdom than with any other country. The real trade with the United Kingdom is not shown, however, because, in addition to foreign goods sent to Australia *via* London, a proportion of the goods sent from New South Wales to Victoria and South Australia is shipped eventually to the United Kingdom; but some of the goods shipped to the United Kingdom are destined for transshipment to foreign ports. The extent of the export trade with the United Kingdom may be gauged by the relation between the value of goods originating in, and the value of goods shipped from the United Kingdom.

The volume of oversea imports divided under the heads of British Empire, i.e., United Kingdom and other British countries, and Foreign countries is shown in the following table for the pre-war year, 1913, and for each year of the six years ended 30th June, 1921.

Year ended 30th June.	Direct Imports from—				Total Imports.
	British Empire.			Foreign Countries.	
	United Kingdom.	Other British Countries.	Total.		
1913*	£ 18,107,138	£ 4,804,041	£ 22,911,179	£ 9,439,484	£ 32,350,663
1916	15,608,510	6,434,638	22,043,148	11,336,550	33,379,698
1917	15,722,209	6,285,552	22,007,761	10,734,536	32,742,297
1918	10,514,972	6,394,583	16,909,555	12,610,431	29,519,986
1919	15,223,547	10,519,693	25,743,240	20,269,862	46,013,102
1920	17,511,059	8,810,532	26,321,591	18,369,008	44,690,599
1921	36,213,537	9,632,130	45,845,667	26,620,721	72,466,388

\* Year ended 31st December.

War conditions caused a diminution in the imports from the United Kingdom after 1913, and an increase in the trade from other British possessions and from foreign countries, notably the United States of America and Japan.

Stated as proportions per cent. of the total imports, the following results are obtained.

Year ended 30th June.	British Empire.			Foreign Countries.
	United Kingdom.	Other British Countries.	Total.	
	per cent.	per cent.	per cent.	per cent.
1913*	56·0	14·8	70·8	29·2
1916	46·7	19·3	66·0	34·0
1917	48·0	19·2	67·2	32·8
1918	35·6	21·7	57·3	42·7
1919	33·1	22·9	56·0	44·0
1920	39·2	19·7	58·9	41·1
1921	50·0	13·3	63·3	36·7

\* Year ended 31st December.

The two tables just given relate to "direct" imports, but in the following table the imports have been assigned to the country of origin :—

Country of Origin.	1913.		1920-21.	
	Value.	Percent- age.	Value.	Percent- age.
	£		£	
United Kingdom ... ..	15,367,428	47·5	32,960,437	45·5
Canada ... ..	359,022	1·1	1,857,411	2·5
India ... ..	1,221,849	3·7	2,801,457	3·9
New Zealand ... ..	1,457,835	4·5	965,682	1·3
Other British Countries ... ..	1,247,102	3·9	2,655,156	3·7
Total, Empire ... ..	19,652,736	60·7	41,240,143	56·9
Germany ... ..	2,834,038	8·8	9,548	0·0
Japan ... ..	467,666	1·4	2,612,079	3·6
United States of America ... ..	5,329,850	16·5	17,399,757	24·0
Other Foreign Countries ... ..	4,066,373	12·6	11,204,861	15·5
Total, Foreign Countries ... ..	12,697,927	39·3	31,226,245	43·1
Total ... ..	32,350,663	100·0	72,466,388	100·0

If this table be compared with the preceding table, the extent to which foreign goods are transhipped in the United Kingdom will be apparent. For example, in 1920-21 the direct imports from the United Kingdom were 50 per cent. of the whole, but the proportion which was produced therein was 45 per cent.

The value of the oversea exports from New South Wales in 1913, and in the six years ended 30th June, 1921, was as shown in the following table :

Year ended 30th June.	British Empire.			Foreign Countries.	Total Exports.
	United Kingdom.	Other British Countries.	Total.		
	£	£	£	£	£
1913 *	11,904,424	3,761,634	15,666,058	17,173,731	32,839,789
1916	15,320,054	5,076,785	20,396,839	20,578,577	40,975,416
1917	23,906,117	12,698,164	36,004,281	14,286,543	50,290,824
1918	17,267,342	10,661,804	27,929,146	11,689,947	39,619,093
1919	23,584,416	13,927,893	37,512,309	13,515,050	51,027,359
1920	26,009,277	10,965,772	36,975,049	18,042,016	55,017,065
1921	20,630,150	11,235,612	31,865,762	20,736,044	52,601,806

\* Year ended 31st December.

It will be seen from this table that, compared with 1913, exports to the United Kingdom and to other British countries have more than doubled, while the exports to foreign countries have remained almost stationary.

The proportions per cent. of the total exports in the same years as in the preceding table were as follow :—

Year ended 30th June.	British Empire.			Foreign Countries.
	United Kingdom.	Other British Countries.	Total.	
	per cent.	per cent.	per cent.	per cent.
1913*	36·2	11·5	47·7	52·3
1916	37·4	12·4	49·8	50·2
1917	47·5	24·1	71·6	28·4
1918	43·6	26·9	70·5	29·5
1919	46·2	27·3	73·5	26·5
1920	47·3	19·9	67·2	32·8
1921	39·2	21·4	60·6	39·4

\* Year ended 31st December.

During the period of the war there were great variations in the proportion of trade with British and with foreign countries. In the year ended 30th June, 1921, the exports of New South Wales to other countries of the British Empire represented 61 per cent. of the total, of which 39 per cent. were exports to the United Kingdom. The exports to foreign countries represented 39 per cent. of the total.

#### ARTICLES OF IMPORT.

In order to show concisely the class of goods imported into New South Wales, oversea imports during the pre-war year, 1913, and the years ended 30th June, 1920 and 1921, have been summarised, as shown in the table below. The figures represent oversea imports only, as interstate transfers are not available.

Classification of Imports.	1913.	1919-20.	1920-21.
	£	£	£
Foodstuffs of Animal origin ... ..	367,881	709,072	489,715
Foodstuffs of Vegetable Origin, and Salt ...	1,450,580	2,461,153	3,952,953
Beverages (non-alcoholic) and substances used in making. ... ..	790,189	2,202,685	1,011,328
Spirits and Alcoholic Liquors, including Spirits for Industrial Purposes, and Pharmaceutical Preparations subject to duty as spirits ...	927,644	564,161	950,572
Tobacco and Preparations thereof ... ..	609,570	1,980,036	2,833,059
Live Animals ... ..	86,131	98,776	52,512
Animal Substances (mainly unmanufactured, not Foodstuffs... ..	185,376	792,765	831,369
Vegetable Substances and non-manufactured Fibres ... ..	539,288	2,402,919	2,786,443
Apparel ... ..	2,325,935	2,191,124	3,669,014
Textiles ... ..	4,745,852	8,138,322	14,877,948
Manufactured Fibres ... ..	881,466	615,372	1,735,916
Oils, Fats, and Waxes ... ..	800,873	1,800,646	3,256,307
Paints and Varnishes ... ..	243,613	194,157	294,054
Stones and Minerals used Industrially... ..	102,292	118,575	124,733
Specie ... ..	160,955	6,631	10,343
Metals, unmanufactured, and Ores (including Bullion) ... ..	1,094,321	127,237	131,109
Metals, partly manufactured ... ..	578,897	393,254	522,835
Machines and Machinery... ..	2,218,755	2,296,411	4,435,952

ARTICLES OF IMPORT—*continued.*

Classification of Imports.	1913.	1919-20.	1920-21.
	£	£	£
Other Manufactures of Metals ... ..	4,907,880	7,043,795	12,187,099
Indiarubber and Indiarubber Manufactures ...	278,263	631,630	841,397
Leather and Manufactures of Leather and Substitutes therefor ... ..	252,344	296,972	374,273
Wood and Wicker, raw and manufactured ...	1,598,287	1,738,253	2,587,272
Earthenware, Cements, China, Glass and Stone- ware ... ..	647,706	574,071	1,386,809
Paper ... ..	891,984	1,314,315	3,127,371
Stationery ... ..	458,079	577,940	858,050
Jewellery, Timepieces, and Fancy Goods ...	705,937	1,120,925	1,345,558
Optical, Surgical, and Scientific Instruments ...	495,204	685,711	740,260
Drugs, Chemicals, and Fertilisers ... ..	863,936	1,443,242	2,146,337
Miscellaneous ... ..	3,141,425	2,119,449	4,905,800
Total Imports ... ..	32,350,663	44,690,519	72,466,388

The great bulk of the imports consists of manufactured articles. Unmanufactured or mainly unmanufactured goods were valued at £7,068,081, or only 9·8 per cent. of the total value, and manufactured goods at £65,398,307 or 90·2 per cent.

In the following table eleven classes of imports shown in the previous table have been arranged in order of importance, and the chief items in each class are shown.

Article.	Value of Import.	Article.	Value of Import.
	£		£
Apparel, Textiles and Manufactured		Beverages—Non Alcoholic—	
Fibres—		Tea .. ..	813,299
Cotton—Dyed or printed .. ..	4,100,143	Cocoa beans .. ..	122,161
" White bleached .. ..	1,848,187	Tobacco—	
" Grey unbleached .. ..	424,730	Unmanufactured .. ..	2,678,160
Piece goods—Silk .. ..	1,420,712	Paper and Stationery—	
" Woollens .. ..	2,561,232	Printing Paper .. ..	1,766,744
Socks .. ..	1,120,660	Books .. ..	447,462
Bags and Sacks .. ..	1,601,026	Writing and Typewriting Paper ..	416,537
Canvas and Duck .. ..	419,955	Wrapping .. ..	284,629
Sewing Silks .. ..	720,524	Oils, Fats, Waxes—	
Trimnings and Ornaments .. ..	449,883	Petroleum .. ..	1,375,614
Lace for Attire .. ..	471,240	Kerosene .. ..	459,773
Machines and Machinery, other Manu- factures of Metals—		Lubricating Mineral .. ..	523,974
Chassis for Motor Cars .. ..	1,468,750	Paraffin .. ..	94,354
Metal Manufactures, other .. ..	1,368,179	Wood and Wicker—	
Machines and Machinery, n.e.i. .. ..	1,146,288	Undressed Timber .. ..	1,362,443
Sheet Iron—		New Zealand White Pine .. ..	506,587
Corrugated, galvanised .. ..	759,621	Drugs, Chemicals, and Fertilisers—	
Galvanised .. ..	292,748	Proprietary Medicines .. ..	259,621
Plain, not galvanised .. ..	1,093,866	Drugs and Medicinal Preparations ..	150,736
Tinned Plates and Sheet .. ..	1,432,575	Toilet Preparations .. ..	138,968
Pipes and Tubes .. ..	815,068	Jewellery—	
Tools of Trade .. ..	573,168	Cameos .. ..	353,091
Dynamo Electric Machines .. ..	608,848	Fancy Goods .. ..	885,352
Cutlery .. ..	388,285	Watches, Chronometers, and Clocks ..	307,466
Foodstuffs of Vegetable Origin—		Other Classes—	
Sugar .. ..	2,989,156	Skins and Hides .. ..	258,411
Rice .. ..	118,590	Fish in Tins .. ..	251,894
Maize .. ..	40,074	Rubber Tyres .. ..	484,746
Vegetable Substances and Fibres—		Cable and Wire, covered .. ..	565,998
Copra .. ..	1,182,885	Iron and Steel—Bar, Rod, Angle ..	373,817
Linseed .. ..	524,305	Films for Kinematographs .. ..	225,878
Kapoek .. ..	119,814		
Resins .. ..	195,902		

## ARTICLES OF EXPORT.

Exports from New South Wales consist chiefly of goods produced or manufactured in the State. Re-exports include produce of other Australian States and produce of other countries.

A classification of the total exports to oversea countries during the pre-war year, 1913, and the years ended 30th June, 1920 and 1921, is shown below:—

Classification of Exports.	1913.	1919-20.	1920-21.
	£	£	£
Foodstuffs of Animal origin ... ..	3,677,455	4,930,061	6,015,205
Foodstuffs of Vegetable origin, and Salt ...	3,547,145	3,655,562	12,598,106
Beverages (non-alcoholic) and substances used in making ... ..	38,054	341,773	99,194
Spirits and Alcoholic Liquors, including Spirits for Industrial Purposes and Pharmaceutical Preparations subject to duty as spirits ...	64,264	400,534	380,706
Tobacco and Preparations thereof ... ..	56,504	230,982	211,226
Live Animals ... ..	78,832	105,974	102,886
Animal Substances (mainly unmanufactured), not Foodstuffs ... ..	14,051,907	26,795,247	14,934,494
Vegetable Substances and non-manufactured Fibres ... ..	64,565	741,117	1,149,362
Apparel ... ..	81,363	741,950	688,910
Textiles ... ..	82,649	572,757	388,146
Manufactured Fibres ... ..	34,510	136,397	72,480
Oils, Fats, and Waxes ... ..	1,167,088	2,003,374	1,079,866
Paints and Varnishes ... ..	10,612	233,413	177,515
Stones and Minerals used Industrially ... ..	1,132,287	899,656	2,245,307
Specie ... ..	905,217	1,683,742	3,709,612
Metals, unmanufactured, and Ores ... ..	6,089,162	6,213,813	3,431,233
Metals, partly manufactured ... ..	25,743	317,610	316,796
Machines and Machinery ... ..	111,592	264,320	381,645
Other manufactures of Metals ... ..	209,129	752,013	948,214
Indiarubber and Indiarubber Manufactures ...	33,304	116,548	104,405
Leather and Manufactures of Leather, and Substitutes therefor ... ..	387,118	1,361,474	623,009
Wood and Wicker, raw and manufactured ...	305,212	291,439	644,823
Earthenware, Cement, China, Glass, and Stone-ware ... ..	19,850	127,798	170,221
Paper ... ..	14,984	66,227	64,614
Stationery ... ..	63,629	90,942	120,945
Jewellery, Timepieces, and Fancy Goods ...	54,883	97,332	127,155
Optical, Surgical, and Scientific Instruments ...	61,534	135,842	137,754
Drugs, Chemicals, and Fertilisers ... ..	176,845	675,217	600,447
Miscellaneous ... ..	294,352	1,033,951	1,077,480
Total Exports ... ..	£ 32,839,789	55,017,065	52,601,806

The principal articles of export during the year ended 30th June, 1921, consisted of staple animal substances, metals, animal and vegetable food, oils, and specie and bullion.

## EXPORTS OF AUSTRALIAN AND OTHER PRODUCE.

During the year ended 30th June, 1921, the exports of Australian produce represented 91·8 per cent., and other produce 8·2 per cent. of the total exports. The following statement shows, for each of the years, 1910 and 1911, the value

of oversea exports under the three heads of "New South Wales produce," "Produce of other Australian States," and of "Other countries." Since 1911 the distinction between New South Wales produce and produce of other Australian States has not been made by the Customs Department. The two have been included together as Australian produce; consequently the table shows, after 1911, only the exports of Australian produce.

Year ended 30th June.	New South Wales Produce.	Produce of Other Australian States.	Produce of Other Countries.	Total.	Percentage of total.	
					Australian.	Other.
	£	£	£	£		
1910*	27,677,088	2,660,263	1,698,100	32,035,451	94·7	5·3
1911*	27,491,326	2,447,089	2,222,986	32,161,401	93·1	6·9
1912*	30,661,028		2,297,501	32,958,529	93·0	7·0
1913*	31,135,169		1,704,620	32,839,789	94·8	5·2
1916	38,656,163		2,319,253	40,975,416	94·3	5·7
1917	47,871,705		2,419,119	50,290,824	95·2	4·8
1918	37,243,979		2,375,114	39,619,093	94·0	6·0
1919	48,621,036		2,403,323	51,027,359	95·3	4·7
1920	50,924,449		4,092,616	55,017,065	92·6	7·4
1921	48,302,717		4,299,089	52,601,806	91·8	8·2

\* Year ended 31st December.

#### EXPORTS OF RAW MATERIALS.

The following table shows the value of the principal raw products of Australian origin exported:—

Article.	Value of Exports.	Percentage of Total Exports.	Article.	Value of Exports.	Percentage of Total Exports.
Pastoral Produce—	£		Mining	£	
Wool ... ..	12,821,572	24·4	Lead Pig ... ..	550,947	1·0
Skins and Hides ... ..	1,911,589	3·6	Copper Ingots ... ..	2,101,014	4·0
Meats ... ..	1,684,242	3·2	Coal ... ..	2,117,426	4·0
Leather ... ..	524,078	1·0	Tin Ingots ... ..	260,797	·5
Tallow ... ..	615,057	1·2	Ores ... ..	113,527	·2
Lard ... ..	101,621	·2	Iron and Steel Ingots	75,069	·1
Agricultural Produce—			Forestry		
Wheat ... ..	10,382,736	19·7	Timber, Undressed...	447,653	·9
Flour ... ..	781,678	1·5			

A very considerable proportion of these articles goes to the United Kingdom. On reference to the tables on page 258, it will be seen that 39·2 per cent. in value of the general exports is consigned to the United Kingdom, and 21·4 per cent. to other British countries; 39·4 per cent. is shipped to foreign countries.

#### RE-EXPORT TRADE.

There is a large re-export of wool, chiefly the produce of Queensland, and a fairly large trade in provisions and manufactured articles of British and foreign production with New Zealand, New Caledonia, Fiji, and other islands of the Pacific.

The returns do not disclose the value of the produce of the other Australian States, but the value of the other produce re-exported during the year ended 30th June, 1921, was £4,299,089. The principal items were: Copra, £1,044,194;

vessels, £533,150; sugar, £220,238; cotton-piece goods, £218,969; spirits, £138,550; rice, £117,054; machinery, n.e.i., £99,669; tobacco, £96,250; apparel and attire, £84,843; metal manufactures, n.e.i., £83,192; tea, £55,035; cameos and precious stones, unset, £46,576; benzine, petrol, and naphtha, &c., £46,297; timber, undressed, £45,777; kerosene and other refined petroleum oils, £43,917; woollen piece goods, £41,808; silk piece goods, £40,997; timber, undressed, £40,955.

### SHIPS' STORES.

In addition to the values of oversea exports shown already, considerable quantities of goods are sent away from New South Wales each year in the form of ships' stores. The value of ships' stores exported during 1920-21 was £2,329,697, of which £2,028,728 was Australian produce, and £300,969 other produce.

Following are details of the most important items of Australian produce exported as Ships' Stores during the year 1920-21 :—

Quantity.				Value.	Quantity.				Value.		
				£					£		
Bunker coal	..	..	tons	1,191,765	1,382,538	Flour	..	..	centals	21,563	26,239
Meats—						Fish, fresh	..	..	lb.	553,397	23,211
Frozen	..	..	lb.	2,875,887	90,056	Milk, preserved	..	..	lb.	917,059	30,978
Fresh or smoked	..	..	lb.	7,023,742	109,244	Potatoes	..	..	cwt.	30,767	19,030
Bacon and ham	..	..	lb.	367,148	32,744	Jams and jellies	..	..	lb.	329,356	12,459
Tinned	..	..	lb.	51,638	3,245	Ale	..	..	gals.	50,430	19,625
Other	..	..	..	....	8,906	Cheese	..	..	lb.	180,098	11,668
Butter	..	..	lb.	559,494	63,581	Sugar	..	..	cwt.	2,259	6,108

### SEA CARRIAGE OF GOODS.

The Sea Carriage of Goods Act, 1904, nullifies any clause in a Bill of Lading or similar document, covenanting or agreeing—(a) that the owner, charterer, master, or agent of any ship, or the ship itself, is relieved from liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold, or any other part of the ship in which the goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods which are to be carried in or by the ship; (b) to lessen any obligations of owner or charterer to exercise due diligence, and to properly man, equip, and supply the ship, to make and keep it seaworthy, and to make and keep the hold, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation; (c) or to lessen the obligations of master, officers, agents, and servants of any ship carefully to handle and stow goods, and to care for, preserve, and properly deliver them.

Regulations under the Commerce (Trade Descriptions) Act, 1905, prohibit the import and export of specified goods unless a trade description is applied to such goods; thus, a high standard quality of goods is assured.

Goods are inspected and examined, and in certain cases a declaration by the exporter must accompany the notice of intention to export. Approved goods for export are marked with an official stamp, butter and cheese are graded, and carcase meat, rabbits, and hares are classified and marked. Special instructions are issued to meat inspectors regarding supervision and inspection for export, and standard requirements are set for abattoirs and premises where meat is preserved for export.

CUSTOMS AND EXCISE REVENUE.

The following statement shows the gross amounts collected in New South Wales under each division of the tariff during the year ended 30th June, 1921, also the drawbacks, refunds, and the net collections:—

Tariff Division.	Gross Collections paid into Revenue.	Draw-backs Paid.	Refunds.	Net Collections.
Customs—	£	£	£	£
1. Stimulants, Ale, Beer, &c. . . . .	833,362	214	675	832,473
2. Narcotics . . . . .	1,172,900	..	150,293	1,013,607
3. Sugar . . . . .	1,266	60	..	1,206
4. Agricultural Products and Groceries . . . . .	355,961	12,796	3,168	339,997
5. Apparel and Textiles . . . . .	2,720,221	47,765	46,257	2,626,199
6. Metals and Machinery . . . . .	2,124,231	30,190	43,088	2,050,953
7. Oils, Paints, and Varnishes . . . . .	262,449	26,273	4,438	231,733
8. Earthenware, &c. . . . .	285,642	4,401	5,150	276,091
9. Drugs and Chemicals . . . . .	224,204	5,962	4,110	214,132
10. Wood, Wicker, &c. . . . .	219,070	3,373	2,254	214,043
11. Jewellery and Fancy Goods . . . . .	409,534	10,701	3,796	395,041
12. Leather and Rubber . . . . .	301,254	13,153	3,207	284,894
13. Paper and Stationery . . . . .	504,020	3,915	9,343	490,762
14. Vehicles . . . . .	370,175	2,857	5,975	361,343
15. Musical Instruments . . . . .	114,088	309	782	112,997
16. Miscellaneous . . . . .	338,806	9,936	5,402	323,468
Customs Miscellaneous . . . . .	29,353	..	310	29,043
Total, Customs Duties . . . . .	£ 10,267,140	171,910	297,248	9,797,982
Excise—				
Beer . . . . .	2,050,812	31,415	..	2,019,397
Spirits . . . . .	680,251	2,686	23	677,537
Tobacco . . . . .	586,760	..	..	586,760
Cigars . . . . .	18,072	..	..	18,072
Cigarettes . . . . .	1,721,252	..	..	1,721,252
Licenses—Tobacco . . . . .	2,905	..	..	2,905
„ Other . . . . .	1,574	..	..	1,574
Total, Excise Duties . . . . .	£ 5,061,626	34,101	23	5,027,497
Total, Customs and Excise Duties . . . . .	£ 15,328,766	206,011	297,276	14,825,479

The following table shows the net collections of Customs and Excise revenue during five years:—

	Year ended 30th June.				
	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Customs Duties . . . . .	5,705,757	4,682,456	5,398,654	6,604,913	9,797,982
Excise Duties . . . . .	1,716,645	1,933,115	2,836,683	4,011,019	5,023,018
Licenses . . . . .	1,871	1,694	4,364	4,398	4,479
£	7,424,273	6,617,265	8,239,701	10,620,330	14,825,479

The increase in customs duty in 1920 is explained by the fact that the new tariff came into operation in March, and not only were higher duties levied during the next three months, but large stocks were taken out of bond in anticipation of the increased duties. The Excise Tariff, 1921, assented to on 16th December, operates on and from that date.

Sydney is a distributing centre for the whole of Australia, consequently the figures for New South Wales include customs receipts for goods which were, in the course of trade, transferred to and consumed in other States. On the other hand, they do not include receipts for goods which were transferred from other States and consumed in New South Wales.



The following table shows the oversea trade at each port and customs station in New South Wales, with customs and excise revenue collected for the year ended 30th June, 1921 :—

Port or Station.	Oversea Trade.			Customs and Excise Revenue Collected.
	Imports.	Exports.	Total.	
	£	£	£	£
Sydney ... ..	70,423,976	49,558,839	119,982,815	14,393,111
Newcastle ... ..	2,042,412	2,928,603	4,971,015	426,098
Clarence River ... ..	...	16,648	16,648	...
Port Kembla ... ..	...	97,716	97,716	...
Allandale ... ..	...	...	...	613
Corowa (Wahgunyah) ... ..	...	...	...	5,657
New South Wales ... ..	£ 72,466,388	52,601,806	125,068,194	14,825,479

#### COMMERCIAL COMMISSIONERS.

New South Wales is represented in Eastern Asia by a Commercial Commissioner, with headquarters at Kobe, Japan. The Commissioner is engaged in fostering the trade of the State in the important markets of eastern countries, and makes periodical tours of Japan, China, India, Philippine Islands, Netherlands India, and other portions of the East, closely watching for new opportunities for trade as well as taking steps to ensure the maintenance of the existing trade.

Reports are furnished by the Commissioner, giving in much detail the market prices, &c., for each commodity exported from New South Wales, also valuable advice to shippers and to the commercial community.

In addition to the assistance given to commerce the Commissioner does useful work in diverting the stream of tourists in the East towards Australia.

There is also a Trade Commissioner for the East appointed by the Federal Government, with headquarters at Shanghai; he will be assisted by two officers, one of whom will be stationed at Shanghai and the other at Hong Kong. It is anticipated that this will result in opening up a very large export trade with China.

In connection with the British Board of Trade, a Trade Commissioner was appointed in 1908 for Australia, with an office at Sydney. He furnishes commercial information, and advises the British Board of Trade generally with regard to openings for Imperial trade.

#### CHAMBERS OF COMMERCE.

Chambers of Commerce have been formed in New South Wales at thirty important trading centres, namely, Sydney, Newcastle, Albury, Auburn and district, Ballina, Bankstown and district, Bellinger River, Bowral, Casino, Coff's Harbour, Cowra, Dungog, Forbes and district, Goulburn, Grafton, Grenfell and district, Hornsby and district, Hurstville and district, Illawarra, Inverell, Katoomba and Leura, Kempsey, Kogarah and district, Lismore, Liverpool, Maitland and district, Manilla, Orange, Parramatta, Young and district. The membership of the Sydney Chamber of Commerce as at June, 1921, was 1,600, including 156 firms and public companies.

## SHIPPING.

OWING to the geographic position of New South Wales, the progress of the national industries is dependent to an unusual degree upon shipping facilities, and efficient transport services to maintain regular and speedy communication are essential to obviate the difficulties of placing the staple products upon distant markets in a satisfactory condition without unduly increasing the cost. Improvement in the methods of carrying perishable products has promoted the growth of a permanent export trade in such commodities as frozen meat and butter; and in the construction of modern ships special provision is made for this class of cargo. After a period of rapid expansion, the shipping services were greatly disorganised during the war period, but there has since been a marked revival.

At the principal ports wharfage accommodation has been extended steadily to keep pace with the growing requirements of trade, and modern appliances for loading and discharging cargo have been installed.

### REGULATION OF SHIPPING.

The shipping of New South Wales is controlled by the State Navigation Department and the Commonwealth Government, but within Port Jackson, control of shipping and matters incidental thereto are vested in the Sydney Harbour Trust. Ultimately the Commonwealth Government, under the new Navigation Act, will absorb the functions of the Navigation Department.

The Commonwealth Navigation Act, 1912-1920, received the Royal Assent by an Order in Council on 14th February, 1921. The Act in its consolidated form contains 425 sections, but it was recognised that it would entail considerable administrative difficulty, and disorganisation of the shipping trade generally, if the many new requirements of the Act were brought into operation simultaneously. It was therefore decided that operations of the Act should come into force sectionally. Seventy-eight sections and four schedules were proclaimed to become operative on 1st July, 1921. These sections relate to the coasting trade; and no ship, whether Australian, British, or Foreign is now permitted to trade on the coast, unless licensed to do so.

Before license can be granted a certain standard of accommodation for officers and crew must be provided, governing space allotted to each member of the crew, ventilation, messrooms, approved pattern of bunks, hospital accommodation for certain classes of ships, supply of hot and cold water for showers, wash-basins, etc., suitable sanitary accommodation, facilities for washing clothes, and adequate shelter for helmsmen.

The provisions of the Act are greatly in advance of anything that has hitherto been enacted by any country for the well-being of its mercantile marine, and considerable expense has been incurred to have ships brought up to requirements; in several instances, many structural alterations had to be effected.

The Navigation Act does not prohibit the employment of coloured labour on ships engaged in the coasting-trade, and it is open to any vessel, whether

British or foreign (unless in receipt of a subsidy from a foreign government), and whether manned by white or coloured crew, to obtain a license on compliance with the provisions of the Act, but up to the present no oversea vessels such as the Orient, the P. and O., and the White Star lines have taken up licenses, consequently no cargo or passengers are being carried in such vessels between ports within the Commonwealth.

All interstate and Australian registered foreign-going vessels have now been licensed. In the case of ships registered outside Australia the Act provides that before granting any license, security is to be given for compliance with the conditions of the license.

The application of the Act to vessels engaged in trading exclusively within the limits of any one State was the subject of consideration before the High Court, which sat at Sydney in July, 1921. The Chief Justice, in giving judgment, intimated that the Court was unanimously of opinion that the Act could not be deemed applicable to vessels engaged in purely intra-State trade with respect to manning accommodation and licensing, judgment being reserved on other points.

That part of the Act relating to Wireless Telegraphy on ships became operative on 1st October, 1921. All vessels engaged in the inter-State trade, and carrying more than twelve passengers, or of 1,600 tons gross registered tonnage or upwards, and all other vessels conveying passengers to or from Australia, now carry an approved wireless installation and certificated operators and watchers according to the class of ship and nature of the trade engaged in.

Other sections now operative are those governing the liability of ship-owners with respect to seamen left on shore suffering from sickness or injury contracted or received in the course of duty.

On 1st March, 1922, further sections of the Act dealing with the engagement and discharge of seamen became operative. These functions, formerly discharged by the State shipping offices, were taken over by the Commonwealth Mercantile Marine Offices. Stringent provision is made against supplying seamen by what is commonly known as "crimping."

Other sections provide that sailors shall possess a knowledge of the English language, and that former enemy aliens shall not be permitted to sign on Articles of Agreement.

All foreign-going or inter-State vessels on voyages between consecutive ports of call which exceed 600 miles, and having 100 or more persons on board, must carry a duly qualified medical practitioner, and all such vessels having more than 10 and less than 100 persons on board must carry a person qualified to render first aid.

Under another section the doubtful concession of advancing one month's wages at the time of engagement is prohibited.

Other matters dealt with in the proclaimed sections include the following:—Supplies for purchase by seamen; apprehension of deserters; disposal of stowaways; record of births, marriages and deaths; penalties for offences against discipline; harbouring deserters; and indentures of apprentices.

The remainder of the Act, which deals with the issue of certificates of competency for officers, survey of ships, pilots and pilotage, Courts of Marine Inquiry, legal proceedings, and other miscellaneous matters, will be brought into operation on dates to be proclaimed, and will gradually absorb the functions hitherto carried out by the various State Departments of Navigation.

## OVERSEA AND INTERSTATE SHIPPING.

*Vessels Entered and Cleared.*

In the shipping records, account is not taken of ships of war, cable-laying vessels, and yachts, consequently they are excluded from consideration in this chapter. Vessels are entered at the first port of call in New South Wales, and cleared at the port from which final departure is taken from the State. The repeated voyages of vessels are included, and where tonnage is quoted the figures relate always to the net tonnage.

The aggregate number and tonnage of interstate and oversea vessels arriving in and departing from all ports of New South Wales at intervals since 1901, with the average tonnage per vessel, are shown in the following statement:—

Year ended 30th June.	Entries.		Clearances.		Average Tonnage per Vessel.
	Vessels.	Tonnage.	Vessels.	Tonnage.	
1901*	2,760	4,133,200	2,853	4,274,101	1,498
1906*	2,893	5,283,719	2,883	5,275,031	1,828
1911*	3,127	6,822,135	3,146	6,833,782	2,177
1913*	3,393	8,117,501	3,375	8,071,101	2,392
1915	3,000	7,051,503	3,059	7,219,914	2,355
1916	3,045	6,552,235	3,062	6,574,582	2,149
1917	2,602	5,803,451	2,613	5,802,683	2,226
1918	2,226	4,407,399	2,235	4,417,390	1,978
1919	2,335	4,452,004	2,275	4,301,617	1,899
1920	2,248	5,356,136	2,288	5,380,653	2,367
1921	3,019	7,123,331	3,023	7,122,209	2,358

\* Year ended 31st December.

In 1913, the year before the war, the tonnage of vessels entered was 8,117,501, and of vessels cleared 8,071,101; from 1915 to 1919 there was a steady decline in the total tonnage, as well as in the average size of vessels entered and cleared, but there has been a remarkable improvement since, and the total tonnage in 1921 was little short of the total in 1915. Vessels with cargo represented 75 per cent. of the total tonnage entered in 1921, and 96 per cent. of the tonnage cleared. Sailing ships represented 2 per cent. only of the total tonnage in 1921, as compared with 17 per cent. in 1901.

## NATIONALITIES OF VESSELS.

The trade of the State of New South Wales, to a very great extent, is carried under the British flag, the deep-sea trade with the mother country and British Possessions being controlled by shipowners of the United Kingdom, and the interstate trade chiefly by local shipowners. The table below distinguishes British and foreign shipping at intervals since 1901.

Year ended 30th June.	Tonnage Entered and Cleared.				Percentage.		
	Australian.	Other British.	Foreign.	Total.	Australian.	Other British.	Foreign.
1901*	3,348,502	3,714,217	1,344,582	8,407,301	39.8	44.2	16.0
1906*	3,899,230	4,920,850	1,738,670	10,558,750	36.9	46.6	16.5
1911*	4,645,195	6,594,649	2,416,073	13,655,917	34.0	48.3	17.7
1913*	5,711,398	7,470,714	3,006,490	16,188,602	35.3	46.1	18.6
1916	5,503,406	6,079,371	1,544,040	13,126,817	41.9	46.3	11.8
1917	4,833,745	5,438,046	1,334,343	11,606,134	41.6	46.9	11.5
1918	4,265,496	3,348,204	1,211,089	8,824,789	48.4	37.9	13.7
1919	3,703,322	3,732,713	1,317,586	8,753,621	42.3	42.6	15.1
1920	3,329,412	5,755,223	1,652,154	10,736,789	31.0	53.6	15.4
1921	4,739,555	6,739,914	2,766,071	14,245,540	33.3	47.3	19.4

\* Year ended 31st December.

In 1901, of vessels trading with this State, those owned in Australia represented 39·8 per cent. of the total; in 1913, 35 per cent., and in 1921, 33·3 per cent. of the total.

In April, 1918, the interstate steamers belonging to the principal Australian companies were requisitioned by the Commonwealth Government. The vessels were run as one fleet, and by an economical arrangement of their employment it was possible to release from the coastwise trade of the Commonwealth a number of passenger steamers and cargo vessels, representing approximately 45 per cent. of the interstate tonnage, and to despatch them to oversea ports. This arrangement was responsible to some extent for the decrease in the Australian tonnage in the years ended June, 1918 to 1920. The influenza epidemic, which necessitated restrictions on the movement of the vessels, and industrial disputes were also factors which contributed to the decline in the Australian tonnage. The steamers were released from Government control in April, 1920, but the owners, who are associated as the Australasian Steamship Owners' Federation continue to run them as one fleet in order to obtain the greatest efficiency. During the year ended June, 1921, there was a marked increase in the Australian tonnage, though it was a million tons below the pre-war level.

The other British tonnage increased to a marked degree during the last two years, and in 1920-21 the proportion of the total tonnage was 47·3 per cent., or slightly higher than in 1913.

The foreign shipping, which declined by 50 per cent. during the first year of the war period has advanced rapidly since 1918.

A comparison of the shipping of the Australian States shows that the tonnage of New South Wales exceeds that of any other State. The following statement shows the entries and clearances during the year ended 30th June, 1921.

State.	Oversea and Interstate.			
	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ... ..	3,019	7,123,331	3,023	7,122,209
Victoria ... ..	2,246	4,663,126	2,248	4,651,818
Queensland ... ..	766	1,771,889	779	1,784,023
South Australia ... ..	947	2,887,035	949	2,918,848
Western Australia ... ..	795	2,843,470	789	2,825,586
Tasmania ... ..	1,059	813,399	1,085	811,744
Northern Territory ... ..	30	65,301	30	65,398

The war caused a material alteration in foreign tonnage, as may be gathered from the statement below, which shows the number and tonnage of shipping

of the principal nationalities that entered and cleared the ports of New South Wales in the last two financial years, as compared with 1913:—

Nationality of Shipping.	Entries and Clearances.						Tonnage— Percentage of each Nationality.		
	1913.*		1919-20.		1920-21.		1913.*	1919-20.	1920-21.
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.			
<b>British—</b>									
Australian .. ..	3,231	5,711,398	2,189	3,329,412	2,904	4,739,555	35·3	31·0	33·3
New Zealand .. ..	771	1,359,138	312	348,091	259	321,420	8·4	3·2	3·2
United Kingdom ..	1,589	6,081,117	1,234	5,359,128	1,608	6,267,994	37·5	49·9	44·0
Other British .. ..	22	30,459	40	48,004	74	150,500	·2	·5	·1
<b>Total .. ..</b>	<b>5,613</b>	<b>13,182,112</b>	<b>3,775</b>	<b>9,084,635</b>	<b>4,885</b>	<b>11,479,469</b>	<b>81·4</b>	<b>84·6</b>	<b>80·6</b>
<b>Foreign—</b>									
Denmark .. ..	2	768	5	20,723	16	58,790	·0	·2	·4
France .. ..	150	313,252	102	148,856	103	129,743	1·9	1·4	·9
Germany .. ..	487	1,533,728	..	..	..	..	9·5	..	..
Italy .. ..	29	47,770	13	51,180	29	107,610	·3	·5	·8
Netherlands .. ..	52	128,870	58	179,574	97	315,795	·8	1·7	2·2
Norway .. ..	183	353,843	18	33,664	93	179,041	2·2	·8	1·3
Sweden .. ..	23	57,643	10	26,659	39	121,353	·4	·2	·9
Japan .. ..	103	832,471	326	795,702	444	1,159,010	2·0	7·4	8·1
United States of America ..	76	148,853	224	331,542	290	604,454	·9	3·6	4·2
Other Nationalities	50	89,292	5	14,254	46	90,275	·6	·1	·6
<b>Total .. ..</b>	<b>1,155</b>	<b>3,006,490</b>	<b>761</b>	<b>1,652,154</b>	<b>1,157</b>	<b>2,766,071</b>	<b>18·6</b>	<b>15·4</b>	<b>19·4</b>
<b>Grand Total ..</b>	<b>6,768</b>	<b>16,188,602</b>	<b>4,536</b>	<b>10,736,789</b>	<b>6,042</b>	<b>14,245,540</b>	<b>100·0</b>	<b>100·0</b>	<b>100·0</b>

\* Year ended 31st December.

The most notable alterations in the foreign trade are the cessation of German shipping, which represented 9·5 per cent. in 1913, and the increases in the tonnage of ships belonging to the United States of America and Japan.

The French line which maintained a regular service with New South Wales before the war, has not been fully restored, and Norwegian tonnage also has declined. The inauguration of regular services between Europe and Australia by Dutch, Italian, and Danish lines has resulted in a marked increase in the tonnage belonging to these nations.

#### *Direction of Shipping Trade.*

A comparative statement of the tonnage entered from and cleared for various countries is shown in the following table. The countries have been grouped according to geographic position in order to indicate as far as practicable, the growth or decline of shipping along the main trade routes. The shipping records, however, do not disclose the full extent of communication between New South Wales and other countries, as they relate only to terminal ports and are exclusive of the trade with intermediate ports,

some of which are visited regularly by many vessels on both outward and inward journeys:—

Country.	1911.		1913.		1920-1921.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
Australian States ... ..	3,519	6,528,328	3,931	8,087,899	3,206	6,382,297
New Zealand ... ..	623	1,223,238	649	1,453,215	769	1,473,057
Europe—						
United Kingdom ... ..	491	2,156,818	477	2,373,487	437	2,282,148
Belgium ... ..	21	62,842	29	92,631	36	141,067
France ... ..	46	131,138	38	110,352	27	83,700
Germany ... ..	191	631,983	216	759,364	7	26,157
Italy ... ..	...	...	2	6,581	13	43,370
Netherlands ... ..	3	5,853	2	5,954	17	70,922
Sweden ... ..	16	37,013	20	51,657	26	88,659
Other ... ..	3	7,983	19	40,918	19	62,436
Total ... ..	771	3,033,630	803	3,440,944	582	2,798,459
Africa—						
Egypt ... ..	...	...	...	...	36	123,624
Union of South Africa ... ..	44	90,578	56	120,584	35	71,743
Other ... ..	15	23,457	13	28,490	10	30,489
Total ... ..	59	114,035	69	149,074	81	225,856
North and Central America—						
Canada ... ..	47	164,027	52	205,650	61	250,365
United States... ..	195	448,798	216	576,943	229	725,231
Other ... ..	11	25,568	13	35,708	9	27,541
Total ... ..	253	638,393	281	818,301	299	1,003,137
South America—						
Chile ... ..	245	564,608	207	504,734	78	156,336
Peru ... ..	51	74,977	31	54,273	11	14,618
Other ... ..	42	68,544	63	113,729	7	12,740
Total ... ..	338	708,129	301	672,736	96	183,694
Asia and adjacent Islands—						
China (including Hongkong)..	24	37,025	29	47,168	51	107,319
India ... ..	63	190,244	59	179,393	91	288,928
Japan ... ..	99	251,972	103	273,960	119	354,622
Netherlands, East Indies ... ..	54	127,255	90	248,512	184	489,499
Philippine Islands ... ..	44	125,848	16	43,201	37	88,477
Straits Settlements ... ..	61	141,576	69	160,124	104	271,410
Other ... ..	...	...	...	...	5	16,991
Total ... ..	345	873,920	366	952,358	591	1,617,246
Pacific Islands—						
Fiji ... ..	81	156,393	80	173,467	58	129,643
Hawaiian Islands ... ..	20	43,367	22	55,735	7	17,291
Nauru ... ..	6	16,304	15	26,861	47	99,335
New Caledonia ... ..	69	126,631	75	164,538	125	119,828
Ocean Island ... ..	28	64,210	29	63,727	45	75,654
Other ... ..	161	129,339	147	129,747	136	120,043
Total ... ..	365	536,244	368	614,075	418	561,794
Grand Total ... ..	6,273	13,655,917	6,768	16,188,602	6,042	14,245,540

This comparison shows that since the suspension of trade with Germany there has been a marked increase in the trade with Eastern ports. The shipping between New South Wales and China, Netherlands East Indies, and the Philippine Islands, has doubled, and considerable increases have occurred in the trade with the Straits Settlements, India, and Japan. The shipping with the United Kingdom has not regained the pre-war level, but the trade with the other European countries, except France, has grown, the increases being considerable in respect of Italy and the Netherlands. Trade with North America has increased, but the tonnage trading with South American countries is less than one-third of the pre-war figure; the decline is the result of restrictions on the export of coal from New South Wales during the war, which caused this trade to be diverted. The Fiji trade has declined, owing mainly to the fact that bananas are now subject to a heavy import duty. However, the shipping trade with Fiji, Hawaiian Islands, and the African ports, is much greater than indicated in the table, as these are intermediate ports on the main trade routes. Trade with Ocean Island and Nauru, which contain rich deposits of phosphates, has grown to important dimensions.

Of the total tonnage in 1921, vessels from and to other Australian States represented 45 per cent. The United Kingdom furnished the next largest tonnage with 16 per cent., followed by New Zealand with 10 per cent. The United States had 5 per cent., Netherlands East Indies 3 per cent., Japan 2 per cent., India and Ceylon 2 per cent. In 1913 Germany headed the foreign tonnage.

The advantage offered by the New South Wales trade to shipowners is illustrated by the large amount of tonnage entries in ballast, and the small number of clearances without cargo. Many vessels arriving in ballast come from ports of neighbouring States, where they have delivered a general cargo, and, having been unable to obtain a full return freight, have cleared for Newcastle, in this State, to load coal. In 1920-21 the tonnage entered in ballast amounted to 1,784,046 tons and the clearances to 270,175 tons.

#### SHIPPING ENTERED AT EACH PORT.

The following statement shows the number and tonnage of vessels, overseas and interstate, which entered the various ports of the State during the last five years :—

Year ended 30th June.	Port Jackson (Sydney).		Port Hunter (Newcastle).		Port Kembla.		Twofold Bay (Eden).		Other Ports.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1917	1,735	4,502,753	692	1,170,368	38	59,875	49	54,607	38	15,843
1918	1,511	3,297,621	620	1,031,506	38	55,236	12	12,057	45	10,979
1919	1,573	3,223,631	676	1,172,724	41	43,709	4	2,552	41	9,388
1920	1,487	3,812,772	696	1,460,916	36	71,162	6	8,245	23	8,041
1921	1,869	4,772,182	1,082	2,255,040	42	85,514	5	3,389	21	3,296



In the foregoing statement Intra-State shipping is excluded, but the following table shows particulars of all shipping—State, Inter-State, and Coastwise—at each port of New South Wales.

Port.	1919-20.		1920-21.	
	Vessels Entered.	Tonnage.	Vessels Entered.	Tonnage.
Bateman's Bay ... ..	82	15,302	103	15,172
Bellinger River ... ..	128	16,348	124	19,790
Byron Bay ... ..	122	70,039	136	73,417
Camden Haven ... ..	82	11,167	103	13,080
Cape Hawke ... ..	144	15,135	123	14,863
Clarence River ... ..	183	59,590	204	65,607
Coff's Harbour ... ..	362	110,930	315	95,143
Crookhaven ... ..	54	6,106	54	8,285
Eden (Twofold Bay)... ..	93	34,480	109	32,450
Kiama ... ..	345	58,315	355	57,047
Lake Macquarie ... ..	2	82	4	363
Macleay River ... ..	178	36,133	200	37,392
Manning River ... ..	75	7,695	69	6,223
Moruya ... ..	56	9,170	75	10,955
Nambucca River ... ..	82	11,832	74	10,785
Narooma ... ..	62	6,101	60	5,826
Port Hunter (Newcastle) ... ..	4,877	3,679,691	5,931	4,637,622
Port Jackson (Sydney) ... ..	7,545	5,803,384	8,698	7,236,253
Port Kembla (Wollongong) ... ..	397	82,869	416	88,417
Port Macquarie ... ..	129	25,235	114	22,732
Port Stephens ... ..	512	43,333	539	41,999
Richmond River ... ..	205	72,320	196	66,631
Tweed River ... ..	51	7,246	39	4,855
Woolgoolga ... ..	90	23,013	87	21,125
Total ... ..	15,856	10,205,516	18,128	12,586,032

Sydney is one of the chief ports of the world, as appears from a comparison of its oversea and interstate shipping entries (entirely exclusive of coastal trade) with the returns of other ports.

Including oversea, interstate, and coastwise shipping, 8,698 vessels, having a net tonnage of 7,236,253, entered Sydney Harbour in the year ended 30th June, 1921.

Appended are the latest tonnage figures, including coastwise, for the principal ports of Australasia and the United Kingdom; the figures include tonnage which arrived at the respective ports, although not recorded as entered by the Customs Department:—

Port.	Tonnage. Arrivals incl. Coastwise.	Port.	Tonnage. Arrivals incl. Coastwise.
<i>Australia—</i>		<i>England—</i>	
Sydney ... ..	7,236,253	London ... ..	13,600,598
Melbourne ... ..	8,226,493	Liverpool (including Birkenhead) ... ..	10,745,787
Newcastle ... ..	4,637,622	Cardiff ... ..	9,285,736
Port Adelaide* ... ..	2,607,064	Newcastle and Shields ... ..	7,900,801
Brisbane ... ..	1,905,111	Newport ... ..	2,826,556
Fremantle ... ..	2,326,551	Hull ... ..	3,286,441
Townsville ... ..	881,416	Falmouth ... ..	1,644,639
Albany ... ..	451,687	<i>Scotland—</i>	
Hobart ... ..	429,022	Glasgow ... ..	3,438,055
<i>New Zealand—</i>		Leith ... ..	1,251,084
Wellington ... ..	2,825,636	<i>Ireland—</i>	
Auckland ... ..	1,886,778	Dublin ... ..	2,554,529
Lyttelton ... ..	1,528,923	Belfast ... ..	2,582,874

\* Exclusive of Coastwise Shipping—not available.

## RIVER TRAFFIC.

The extent of the waterways of New South Wales was shown in the 1914 issue of this Year Book. Relatively to other countries, New South Wales has few inland waterways, but is dependent upon railways and ocean shipping as the principal agencies of transportation. On the coastal rivers there is some traffic apart from the vessels trading between the river ports and Sydney, but its extent is not recorded.

On the inland rivers there is considerable traffic after a season of good rainfalls. The Murray River is navigable for 150 miles above Albury, or 1,590 miles from its mouth. Its tributaries, the Kyalite or Edwards River, and the Wakool River, are navigable for 400 miles, as far as Deniliquin; the Murrumbidgee and the Lachlan Rivers combined provide 900 miles of navigable waterway; and the Darling is navigable in time of freshets as far as Walgett, 1,758 miles from its confluence with the Murray. Altogether, the Murray River system provides 4,200 miles of waterway, more or less navigable, principally for flat-bottomed barges and other small craft. The volume of traffic on these rivers is not recorded.

## WRECKS AND DISASTERS.

Wrecks and shipping casualties occurring to British merchant shipping on the coast of New South Wales are investigated by Courts of Marine Inquiry, of which some account is given in the chapter of this Year Book relating to Law Courts. The following statement shows such wrecks and casualties reported since 1916 :—

Year ended 30th Ju	British Vessels.				Total Tonnage.	Crews and Passengers.	Lives Lost.
	Steam.	Motor.	Sailing.	Total.			
1916	5	6	4	15	3,466	81	4
1917	11	...	2	13	6,554	314	6
1918	4	...	...	4	7,522	208	4
1919	5	...	1	6	1,214	64	30
1920	4	1	...	5	775	109	7
1921	6	...	1	7	1,475	133	36

The majority of the vessels reported are small coasters under 200 tons. The figures given above do not include vessels which left the ports of the State and have been recorded as missing.

Two life-boat stations are maintained, one at Sydney and the other at Newcastle, and the whaleboats at the pilot stations are fitted for rescue service. Subsidised steam tugs are available also for the purpose of assisting vessels in distress, and life-saving appliances are kept at certain places along the coast. A considerable number of vessels trading in Australian waters are fitted with wireless telegraphy apparatus.

The Royal Shipwreck Relief and Humane Society of New South Wales is maintained by public subscriptions, unsubsidised by the State, to afford relief in cases of distress to dependents of seamen belonging to New South Wales who have lost their lives or sustained injury in the discharge of their duties, to relieve crews of vessels and necessitous passengers wrecked in New South Wales waters, and to encourage acts of bravery by granting awards for meritorious deeds in saving human life. The relief granted on account of maritime disasters during the year ended 30th June, 1921, amounted to £586.

## PILOT AND ROCKET STATIONS.

Pilotage on the coast of New South Wales is a State service. The services of pilots must be engaged for all vessels not specifically exempted, and

certificates of exemption from pilotage for the various ports of the State are granted, after examination, only to British subjects, and may be used only in respect of British ships registered in Australia or in New Zealand, and engaged in trade in Australasia and the South Sea Islands, or in whaling.

#### COASTAL AND HARBOUR LIGHTS.

On account of the unbroken regularity of the coast and the almost complete absence of islands, navigation along the coast of New South Wales is exceedingly safe. The coast line is 700 miles long, and there are no less than twenty-eight lighthouses—an average of one for every 25 miles of coast.

In addition, lighted beacons and leading lights are placed for the safety of harbour navigation in the ports of Sydney, Newcastle, Narooma, Port Kembla, Ulladulla, and Moruya, and on all Northern rivers.

In Port Jackson the question of efficient lighting has received considerable attention; leading lights have been erected, and lights on buoys mark the channels. Electric fog-bells are used in times of fog. In Port Hunter leading lights have been placed, and there are fog-bells.

Location of Lighthouse.	South Latitude.	Description of Light.	Colour of Light.	Distance Visible (See note).
	° ' "			Nautical miles.
Green Cape ... ..	37 16	Flashing ... ..	White ... ..	19
Twofold Bay (Eden) (Lookout Point).	37 4	Fixed ... ..	Red ... ..	7
Montague Island—Summit ...	36 15	Fixed and Flashing...	White ... ..	20
Bateman's Bay ... ..	35 44	Fixed ... ..	Red ... ..	...
Ulladulla (Warden Head) ...	35 22	Group Flashing ...	White ... ..	15
Jervis Bay (Point Perpendicular)	35 5	" " ... ..	" " ... ..	24
Crookhaven River ... ..	34 54	Fixed ... ..	Red ... ..	8
Kiama ... ..	34 40	Group Flashing ...	White ... ..	15
Wollongong ... ..	34 25	" " ... ..	" " ... ..	10
Bellambi ... ..	34 22	Occulting ... ..	White and Red	8
Cook's River (Botany Bay) ...	33 57	Fixed ... ..	White ... ..	...
Port Jackson, Sydney—				
Macquarie (Outer South Head)	33 51	Flashing ... ..	" " ... ..	25
Hornby (Inner South Head)...	33 50	Fixed ... ..	" " ... ..	14
Broken Bay (Barrenjoey) ...	33 35	" " ... ..	Red ... ..	10
Norah Head ... ..	33 17	Flashing ... ..	White ... ..	18
Port Hunter, Newcastle—				
Nobbys Head (Summit) ...	32 55	Group Flashing ...	" " ... ..	17
Port Stephens—				
Stephens Point ... ..	32 45	Alternating Flashing	{ White and Red }	W. 14 R. 8
Nelson Head (Summit) ... ..	...	Fixed ... ..	{ White and Red }	W. 10 R. 6
Sugarloaf Point (Seal Rocks) ...	32 26	Flashing ... ..	White ... ..	22
" (same Tower) ... ..	...	Fixed ... ..	Green ... ..	3
Forster, Cape Hawke (anchorage)	32 11	" " ... ..	" " ... ..	6
Crowdy Head (Summit)...	31 51	Group Flashing ...	{ White and Red }	W. 12 R. 6
Tacking Point ... ..	31 29	" " ... ..	White ... ..	12
Smoky Cape ... ..	30 56	" " ... ..	" " ... ..	28
Monument Rock, Trial Bay ...	30 53	Fixed ... ..	{ White and Red }	W. 6 R. 3
Coff's Harbour Jetty ... ..	30 18	" " ... ..	Red ... ..	5
South Solitary Island (Summit)	30 12	Flashing ... ..	White ... ..	20
Clarence River ... ..	29 26	Fixed ... ..	" " ... ..	12
Richmond River ... ..	28 52	Group Flashing ...	" " ... ..	12
Cape Byron ... ..	28 38	Flashing ... ..	" " ... ..	26
" (same Tower) ... ..	...	Fixed ... ..	Red ... ..	8
Tweed River (Fingal Head) ...	28 11	" " ... ..	White ... ..	12

*Distance visible.*—The distance is calculated visible to an observer whose eye is elevated 15 feet from the sea-level.

## DOCKS AND SLIPS.

As the shipping traffic, employing vessels of considerable size, is concentrated at Sydney and Newcastle, accommodation, provided by the Government and by private enterprise, for building, fitting, and repairing ships in the State, is available at these ports. At Sydney there are four graving docks, five floating docks, and six patent slips, and at Newcastle there are three patent slips. Other docking and building yards are established along the coast to meet the necessities of the smaller vessels engaged in coastal trade.

At Cockatoo Island, which is under the control of the Department of the Navy, there are two graving docks "Fitzroy" and "Sutherland," the largest of which ("Sutherland") is 633 feet long, and can accommodate a vessel 84 feet in breadth, and a draught of 30 feet.

At Woolwich, the Morts' Dock and Engineering Company, Ltd., has a graving dock 850 feet long which, at high tide, can take a ship drawing 28 feet. The same Company has three floating docks, the largest of which is 317 feet long, capable of lifting a vessel of 1,100 tons and drawing 13 feet. The Company also has three patent slips, the largest of which is 270 feet long, and able to take a vessel 36 feet wide, 1,500 tons in weight, and drawing 11 feet forward and 16 feet aft.

At Newcastle there are three privately-owned patent slips, the largest of which is 200 feet long, and can take a vessel 40 feet wide and 800 tons weight, drawing 8 feet forward and 12 feet aft.

At four of the Northern rivers, there are graving docks under the control of the Public Works Department, the largest of which is 214½ feet long, 45 feet wide, and can accommodate a ship with a draught of 10 feet.

## SHIP-BUILDING.

The numbers and tonnage of steam and sailing vessels built in New South Wales are shown in the following statement for the period 1876-1921 :—

Years.	Sailing.		Steam.		Motor.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1876-1885	328	16,722	297	24,778	...	...	625	41,500
1886-1895	144	5,742	129	7,211	...	...	273	12,953
1896-1905	160	7,160	137	8,529	...	...	297	15,689
1906-1915	20	931	126	7,799	24	364	170	9,094
1916	2	184	8	355	6	146	16	685
1917	4	365	5	8,032	8	104	17	8,501
1917-18	2	300	6	4,132	5	380	13	4,812
1918-19	1	256	9	4,085	4	226	14	4,567
1919-20	2	248	22	31,105	14	487	38	31,840
1920-21	1	7	8	808	6	84	15	899

The fourteen vessels built during the year ended 30th June, 1919, were of wood, and of the thirty-eight constructed during the following year, twenty were of wood, while all ships constructed in 1920-21 were of wood. Of the vessels constructed during the last three years, six were for the Commonwealth Government. They were the "Delungra," "Dilga," "Dinoga," and "Dundula," each being a steel vessel of 3,308 tons, and the "Eurelia" and "Enoggara."

## COMMONWEALTH GOVERNMENT LINE OF STEAMERS.

For the purpose of providing transportation for Australian produce, which had accumulated as a result of bountiful harvests, and which could not be exported owing to the disorganisation of shipping, due to the War, the Commonwealth Government inaugurated a line of steamers in 1916 by the purchase, at a cost of about £2,000,000, of fifteen cargo steamers, with a lifting capacity of about 106,000 tons.

On the cessation of hostilities, a regular fortnightly cargo service was established between British ports and Australia, also a monthly service to Java.

The present fleet consists of 47 vessels, with a deadweight capacity of 352,642 tons, and other vessels are being constructed. Several of the "Bay" line of vessels have already completed their maiden voyage to Australia, carrying a large number of immigrants, in addition to freight. The net profits of the fleet for the five years ended 30th June, 1921, amounted to £3,290,965, showing a net gain of £1,660,387.

## COMMONWEALTH GOVERNMENT SHIPBUILDING.

In addition to purchasing a fleet of mercantile steamers, the Commonwealth Government decided to build ships at their own yards, and the original programme provided for the construction of 48 vessels (24 wooden and 24 steel.) Eight steel and eighteen wooden vessels were to be built in New South Wales; only two of the latter were constructed, the contracts for the remainder having been cancelled.

Of the steel vessels, the "Delungra," "Dilga," and "Dinoga" have been completed at Walsh Island, and the "Dundula" at Cockatoo Island. Each of these vessels is 3,308 gross tonnage. The "Eurelia" and the "Enoggara" were completed at Walsh Island and are now in commission, and the "Eununda," built at Cockatoo Island, will be handed over immediately.

## SHIPPING REGISTERS.

Although the Act, which controls the registration of shipping in New South Wales, does not require the registration of vessels under 15 tons burthen, few of such vessels remain unregistered. The rules of yachting clubs ensure the registration of the yachts, steamers, and motor boats of the members; and for the purpose of sale or mortgage, business is facilitated by such registration.

The only ports in New South Wales at which shipping registers are maintained are Sydney and Newcastle.

The aggregate numbers and tonnage of steam and sailing vessels on the registers at the close of each year, since 1916, are shown in the following statement:—

Year ended 30th June.	Steam.		Motor.		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1916	551	92,579	173	2,136	418	37,250	1,142	131,965
1917	542	99,445	180	2,199	395	34,724	1,117	136,368
1918	537	101,478	177	2,367	386	34,394	1,100	138,239
1919	522	97,954	178	2,553	361	31,117	1,061	131,626
1920	514	116,114	187	2,461	313	28,614	1,014	147,189
1921	518	128,710	189	2,312	310	29,521	1,017	160,543

Of the 1,017 vessels registered in New South Wales, the majority are of small tonnage. No less than 658 (65 per cent.) are under 50 tons, 287 (28 per cent.) are from 50 to 500 tons, 29 (3 per cent.) are from 500 to 1,000 tons, 17 (2 per cent.) are from 1,000 to 1,800 tons, and 26 (2 per cent.) are over 1,800 tons.

The following statement shows the number and value of vessels built outside Australia and brought into New South Wales for local trade during five years ended 30th June, 1921 :—

Year ended 30th June.	From United Kingdom.		From Other Countries.		Total.	
	Vessels.	Aggregate Value.	Vessels.	Aggregate Value.	Vessels.	Aggregate Value.
1917	4	£ 425,861	...	£ ...	4	£ 425,861
1918	...	...	1	2,362	1	2,362
1919	...	...	2	200,000	2	200,000
1920	3	160,000	...	...	3	160,000
1921	8	1,398,500	6	90,413	14	1,488,913

Changes on the register by sales during the last five years are summarised as follows. Sales to foreigners result in removal of the vessels from the registers :—

Year ended 30th June.	To British Subjects.						To Foreigners.					
	Steam.		Motor.		Sailing.		Steam.		Motor.		Sailing.	
	Vessels.	Ton-nage.	Vessels.	Ton-nage.	Vessels.	Ton-nage.	Vessels.	Ton-nage.	Vessels.	Ton-nage.	Vessels.	Ton-nage.
1917	27	10,235	6	156	12	2,449	1	705	...	...	1	13
1918	54	11,174	14	256	12	860	...	...	2	44	...	...
1919	31	5,268	12	132	22	409	1	2,280	...	...	1	15
1920	45	15,947	20	804	15	1,468	3	2,139	1	8	1	13
1921	61	11,382	15	371	7	325	1	16	1	67	...	...

#### QUARANTINE.

The administration of all matters relating to seaboard quarantine is under control of the Commonwealth. The Quarantine Act, 1908-1915, defines the vessels subject to quarantine, and provides for the exclusion, detention, observation, segregation, isolation, protection, sanitary regulation, and disinfection of vessels, persons, goods, things, animals, or plants, so as to prevent the introduction or spread of diseases or pests into the Commonwealth. Particulars of vessels examined by the Government Port Health Officers at Sydney and Newcastle, during each of the last five years, are shown in the following table :—

Year ended 30th June.	Vessels.		Persons.		
	Ex-aminated.	Vessels Fumigated.	Passengers.	Crews.	Total.
1917	612	816	21,466	41,241	62,707
1918	431	752	15,000	25,248	40,248
1919	922	808	44,488	54,801	99,289
1920	928	876	89,485	69,900	159,385
1921	1,189	1,194	57,286	79,066	136,352

Vessels arriving in Australian ports from overseas are examined at the first port of call, and in the case of vessels from places north of Australia, at the last port of call, and pratique is given ordinarily for the whole of the Commonwealth.

Stock quarantine is undertaken at Port Jackson, where 12 horses, 30 sheep, 7 cattle, 4 dogs, and 5 goats were detained during the year ended 30th June, 1921.

## GOVERNMENT SHIPPING OFFICES.

Government Shipping Offices are maintained at Sydney and at Newcastle to deal with matters relating to the engagement and discharge of seamen of British vessels. Following are the records of transactions at each of these shipping offices for the last five years :—

Year ended 30th June.	Engagements registered.			Discharges registered.			Licenses to ship.		
	Sydney.	Newcastle.	Total.	Sydney.	Newcastle.	Total.	Sydney.	Newcastle.	Total.
1917	26,679	4,555	31,234	27,901	3,900	31,801	1,615	214	1,829
1918	26,002	4,109	30,111	25,407	3,332	28,739	2,839	605	3,444
1919	21,199	3,120	24,319	24,208	2,908	27,116	1,605	358	1,963
1920	23,305	3,071	26,376	21,503	2,479	23,982	1,694	451	2,145
1921	24,684	4,917	29,601	24,212	4,410	28,622	1,344	439	1,783

During the year ended 30th June, 1921, seamen reported as deserters from British vessels, trading on foreign voyages, numbered 125, viz., 67 at Sydney, and 58 at Newcastle. The wages paid to seamen through these shipping offices amounted to £165,146, of which £136,210 were paid at Sydney. Wages issued in advance notes amounted to £1,523, of which £605 were recorded for Sydney.

Masters of foreign vessels engage and discharge seamen at the offices of the consuls representing the countries to which the vessels belong, and no particulars are available in regard to these transactions.

In regard to the crews of vessels which arrived from and departed to countries beyond the Commonwealth, there was an excess of departures of 2,439 in 1919–20, and an excess of departures of 745 in 1920–21.

## WAGES.

The wages paid to the officers and crews of vessels in the Australian trade are regulated by Awards of the Commonwealth Court of Conciliation and Arbitration. The average wages paid per month in March, 1922, were as follows :—

Occupation.	Inter-state.						Coastal.							
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.		
Officers—Chief ... ..	20	10	0	to	31	10	0	20	10	0	to	26	10	0
Second ... ..	18	10	0	„	28	10	0	18	10	0	„	23	10	0
Third ... ..	19	10	0	„	25	10	0	18	10	0	„	23	10	0
Junior ... ..	£18 10s.						.....							
Engineers—Chief ... ..	30	10	0	to	51	0	0	} 19	0	0	to	42	0	0
Second ... ..	25	0	0	„	33	0	0							
Third ... ..	23	10	0	„	27	10	0							
Fourth ... ..	19	10	0	„	24	10	0							
Firemen ... ..	16	10	0	„	17	0	0	17	7	0	„	18	7	0
Trimmers ... ..	£14 10s.						£15 7s.							
Seamen—Steamers ... ..	£14 10s.						£15 7s.							
Sailing Ships ... ..	10	0	0	to	14	0	0	8	10	0	to	10	10	0
Cooks ... ..	13	0	0	„	22	10	0	13	0	0	„	20	5	0
Stewards—Chief ... ..	} 15	6	0	to	20	6	0	} 18	10	0	„	23	0	0
Assistant ... ..														
Stewardesses ... ..	10	12	0	„	11	15	0	10	12	0	„	11	15	0

## SEAMEN'S COMPENSATION ACT.

The Seamen's Compensation Act, 1911, applies to ships in the service of the Commonwealth (exclusive of naval or military service), and to ships trading with Australia, or engaged in any occupation in Australian waters, or in trade and commerce with other countries or among the States. The schedules

to the Act indicate the amount of compensation payable, in case of death or total or partial incapacity, resulting from personal injury by accident to seamen in the course of their employment. Regulations also indicate methods of procedure for recovery of compensation.

Seamen are not allowed the benefits of this Act while they are being provided for under Section 135 of the Navigation Act.

#### RATES OF FREIGHT.

As has already been shown in the section treating of Commerce a large proportion of the export trade is conducted with the United Kingdom.

In the following table, which shows the rates of freight on certain articles by steamer only, the freight rates from Sydney to London have been shown :—

Article.		1913-14.	1918-19.	1919-20.	1920-21.
Butter	Per box 56 lb.	2s. to 2s. 6d.	5s. 3d. + 5% to 6s. 3d.	5s. 3d. to 5s. 4d. + 5%.	6s.
Copra	Per ton	42s. 6d.	208s. to 277s. 6d.	208s. to 225s.	225s. to 120s.
Hides	"	50s. to 60s.	1½d. to 2½d. per lb.	1½d. per lb.	1½d. to 1d. per lb.
Leather	"	80s.	135s. to 380s.	135s. to 270s.	270s. to 244s.
Meat—Frozen	Per lb.	½d. to 1½d.	1½d. to 1½d. + 5%.	1½d. to 1½d. + 5%.	1½d. + 5% to 2d. + 5%.
Rabbits—Cold preserved	Per ton	55s.	120s. to 167s. 6d. + 5%.	120s. to 167s. + 5%.	105s. to 184s.
Tallow	"	47s. 6d.	180s. to 240s.	180s.	180s. to 170s.
Wheat	"	25s. to 37s. 6d.	105s. to 160s.	120s. to 150s., less 5%.	120s. to 46s. 8d.
Wool—Greasy	Per lb.	3d.	1½d. to 2½d.	1½d.	1½d.
Measurement Goods	Per 40 cubic ft.	40s. to 45s.	120s. to 160s.	120s.	120s. to 105s.
Timber	Per 100 sup. ft.	6s. 9d.	27s. 6d. to 35s.	35s.	35s. to 22s.

Freight rates rose enormously between 1914 and 1920, and, although their course is now downward they are still much higher than they were in 1914.

#### THE PORT OF SYDNEY.

The prominent position which Sydney enjoys as the chief distributing centre for Australasia, among other factors, is due partly to its natural harbour, wherein the largest ocean-liners can berth right at the wharves, and partly to its central position on the East Australian coast.

Sydney Harbour has every natural advantage for an ideal commercial centre.

On account of its narrow entrance it is almost land-locked, and resembles a lake rather than a sea-port. The entrance faces east, instead of south (whence bad weather comes) consequently the violence of the waves expends itself on the north headland instead of directly sweeping into the harbour to the inconvenience of shipping. The coast is generally sufficiently high to protect the harbour from the full force of violent winds.

The area is 14,284 acres (22 square miles) but on account of its irregularity the coast line is no less than 188 miles. The great length of coast line is a distinct advantage, as it provides unlimited facilities for wharves in close proximity to the centre of the city, while the comparatively small area prevents the formation of high seas within the harbour itself.

The remarkable irregularity of Sydney Harbour is due to the fact that it is what geologists term a "drowned valley," having been formed by the subsidence of the continent which thus allowed the waters of the ocean to enter what was once a valley.

There are no large rivers entering the harbour to bring down silt, consequently very little expense is incurred in dredging, other than for the purpose of deepening the harbour permanently. The depth of the water at the heads is 80 feet, and at the wharves from 30 to 50 feet, so that there is no necessity for the erection of long jetties.



The rise and fall of the tides range from 3 to 6 feet only, the average of ordinary tides being 3 ft. 4½ in., a variation too small to inconvenience ships moored at wharves or to affect their entrance.

There is a reef in the harbour fairway, but as the reef runs parallel to the direction of outgoing and incoming vessels, it is more of an advantage than a disadvantage, as it serves to create two channels, and the port is unique in having separate incoming and outgoing deep-sea ship channels. The eastern channel has a depth of 40 feet at low water for a width of 700 feet and the western channel has a depth of 40 feet, but its minimum width at the present time is only 350 feet; dredging operations are now proceeding for the purpose of widening this channel.

Sydney already possesses extensive plant for loading and coaling ships and is completely equipped for storing and loading grain in bulk. At Ball's Head a private company has installed a plant which is capable of coaling vessels at the rate of 1,400 tons an hour, while in the same time an oil-burning ship can take in sufficient oil for a voyage of 6,000 miles.

The distances from Sydney by ordinary sea routes, to the principal ports of the world are as follow :—

Port.	Distance from Sydney.	Port.	Distance from Sydney.
	miles.		miles.
Adelaide ... ..	980	San Francisco ... ..	6,500
Albany ... ..	1,790	Vancouver ... ..	7,050
Brisbane ... ..	510	Hong Kong... ..	4,400
Fremantle ... ..	2,100	Singapore ... ..	4,175
Hobart ... ..	630	Capetown ... ..	6,375
Melbourne ... ..	575	Aden ... ..	6,875
Darwin ... ..	2,435	Bombay ... ..	6,005
Thursday Island ... ..	1,685	Colombo ... ..	5,125
Auckland ... ..	1,280	Suez ... ..	8,187
Wellington ... ..	1,240	London (via South Africa) ... ..	12,625
New Caledonia ... ..	1,073	„ (via Suez) ... ..	11,490
Suva ... ..	1,775	„ (via Panama) ... ..	12,770
Samoa ... ..	2,354	Marseilles ... ..	9,795
Solomon Islands ... ..	1,662	Naples ... ..	9,375
Honolulu ... ..	4,425	New York (via Panama) ... ..	10,030

During the year ended 30th June, 1921, the overseas imports at the port of Sydney were valued at £70,423,976, and the interstate imports at £22,649,398, the total being £93,073,374; the value of imports from other ports of the State to Sydney is not obtainable.

The following table shows the number of overseas, interstate, and State vessels with their tonnage which entered the port during the last ten years :—

Year.	Vessels Entered.	Net Tonnage.	Year.	Vessels Entered.	Net Tonnage.
1912... ..	9,675	8,494,059	1917† ... ..	8,453	6,725,323
1913... ..	9,922	9,018,785	1918† ... ..	7,538	5,320,400
1914* ... ..	4,881	4,710,577	1919† ... ..	7,499	5,152,666
1915† ... ..	9,466	8,164,333	1920† ... ..	7,545	5,803,384
1916† ... ..	9,285	7,535,277	1921† ... ..	8,698	7,236,253

\* Six months ended 30th June.

† 12 months ended 30th June.

#### SYDNEY HARBOUR TRUST.

Up to the year 1901, the wharves of Sydney Harbour were in private hands, there was no system of laying out the foreshores, access to the wharves was difficult and intricate, and the insanitary condition of the wharves and adjoining property, and the general chaotic conditions called for drastic treatment.

The wharves were resumed by the Government in 1901, together with a large area of adjoining property, and the Sydney Harbour Trust was appointed with full power of administration over the harbour, and the resumed property, including power to levy and collect certain tolls, etc., and to purchase and resume lands. The exclusive control of the port and shipping, harbour lights, beacons, buoys, wharves, and the preservation and improvement of the port generally were vested in the Trust.

The Harbour Trust, upon its creation in 1901, was debited with the cost of improvements made up to that time, as well as the cost of wharfage resump-tions; in 1902 these aggregated £4,700,000. In the last nineteen years, upwards of £4,000,000 more have been spent, making a grand total expended upon harbour improvements and foreshore properties of about £9,000,000.

The following table shows the number and length of berths under the control of the Harbour Trust, passenger ferries being excluded :—

Locality.	Number of Berths.	Length of Berths.
		ft.
Woolloomooloo Bay ... ..	13	5,713
Circular Quay ... ..	10	3,953
Walsh Bay ... ..	12	6,885
Darling Harbour ... ..	112	36,784
Blackwattle Bay ... ..	27	3,191
Rozelle Bay ... ..	12	2,081
White Bay ... ..	8	2,810
Total ... ..	194	61,417

As mentioned in the previous paragraph, these wharves are nearly all in the immediate vicinity of the business quarter of Sydney, which is a peninsula surrounded by Woolloomooloo Bay, Farm Cove, Circular Quay, Walsh Bay, and Darling Harbour. In this respect the business part of Sydney bears a remarkable resemblance to Manhattan Island, the commercial centre of New York.

Most of these wharves are well provided with sheds, many of them of considerable dimensions; one at the grain loading wharf at Darling Island is 1,270 feet long and 80 feet wide, another at the grain loading jetty at Pyrmont is 1,060 feet long and 51 feet wide.

One of the latest improvements is the construction of wharfage in connection with the bulk handling of wheat at Glebe Island. The Government has erected silos, with a storage capacity of six million bushels, which can be unloaded from railway trucks at the rate of 80,000 bushels per hour. The wheat can be delivered to ships at the rate of 60,000 bushels per hour, and the stream can be divided to load four different vessels simultaneously.

An efficient Harbour Trust Fire Brigade is stationed at Goat Island, consisting of three ships the "Hydra," "Pluvius," and "Cecil Rhodes," which can discharge 3,500, 2,500, and 3,500 gallons per minute respectively. These steamers are also fitted with heavy suction pipes for salvage purposes.

The Trust has a fleet of nine dredges, one mounting a 15-ton crane. During the year ended 30th June, 1921, 1,487,129 tons of sand, silt, mud, rock, &c., were removed. The cost of dredging, towing, and repairs during the same period amounted to £71,078.

During the year 40,684,700 passengers were carried by the various ferry services, as against 40,930,513 during the previous year.

The number of persons employed by the Trust in June, 1921, was 1,628, and their salaries for the same month amounted to £34,206.

The capital debt on 30th June, 1921, amounted to £9,449,213, and the revenue and expenditure during the year ended 30th June, 1921, were as follows:—

Revenue.		Expenditure.	
	£		£
Wharfage Rates ... ..	429,986	Commissioners' Salaries ... ..	3,300
Tonnage „ ... ..	41,776	Head Office ... ..	53,602
Berthing Charges ... ..	1,801	Supervising Wharves ... ..	13,980
Storage Charges ... ..	4,858	Control of Harbour ... ..	4,448
Rents—Wharves, Jetties, Bonded Stores, &c. ... ..	190,548	Management of Property ... ..	39,864
Rents—Shops and Houses ... ..	68,881	Lighting Property ... ..	1,297
Bond and Motor Lorry Charges ... ..	35,801	Watching ... ..	2,685
License Fees ... ..	3,678	Dredging ... ..	16,376
Other ... ..	19,882	Insurance ... ..	12,255
		Rates and Taxes ... ..	14,433
		Pensions ... ..	18,559
		Bonds and Motor Lorries ... ..	27,447
		Other ... ..	16,431
		Total, Working Expenditure ... ..	224,677
		Interest on Capital ... ..	438,210
		Disbursements from Public Works Fund ... ..	20,088
Total ... ..	797,211	Grand Total ... ..	682,975

The gross revenue for the year was £797,211, equal to 8·66 per cent. on the capital expenditure, and the net revenue was £572,535, equal to 6·22 per cent. After allowing for interest on capital at the rate of 4 per cent., and deducting disbursements from Public Works Fund, there was a surplus of £114,237, equal to 1·24 per cent. on the capital.

#### NEWCASTLE HARBOUR.

Newcastle Harbour is at the mouth of the Hunter River; its area is 2,757 acres. The minimum depth on the line of fairway is 23 feet 6 inches at low water, ordinary spring tides, but vessels which draw 27 feet can enter safely at high water spring tides, and it is proposed to deepen the entrance to 32 feet at low water. A fleet of ten dredges is employed to maintain and deepen the port. The spring tide range is 5 ft. 6 in., and that of neap tide, 3 ft. 6 in.

The harbour is sufficiently landlocked to render it safe for vessels in all weathers, and its natural advantages have been improved by the construction of breakwaters.

Owing to its proximity to the very extensive coal-fields of Newcastle and Maitland, the port has a large export trade in coal, and the establishment of steelworks at Port Waratah has further increased its trade.

Wharfage accommodation to the extent of 21,971 feet is provided for the following purposes:—

Coal shipping ... ..	10,138 feet.
General cargo ... ..	6,855 „
Wharves on leases ... ..	2,550 „
Wharves for Government purposes ... ..	2,428 „

In addition, there are ninety-eight mooring dolphins and jetties for vessels awaiting loading.

The coal shipping wharves, which are situated on the eastern side of Carrington, and in the inner basin are fitted with one steam crane and seventeen hydraulic cranes, with a capacity from 12 to 30 tons, one McMylor hoist, and six 15-ton electric cranes.

Coal loading, which is limited to a great extent by the trimming, has been carried out on vessels up to an average rate of 450 tons per hour. The depth at low water at these berths varies up to 28 feet.

The general cargo shipping wharves are located on the side of the harbour adjacent to the city and are connected with the Great Northern Railway. The depth of water at these wharves is from 5 to 28 feet at low water, ordinary spring tides. Storage accommodation is provided at Lee Wharf, which it is proposed to extend still further.

## HARBOURS AND ANCHORAGES.

The principal shipping places on the coast of New South Wales, which has an approximate length of 700 miles, may be classified as natural harbours, artificial harbours, bar harbours, and anchorages. The following statement shows these shipping places in order from north to south, their distances from Sydney, and the average depths at low water, ordinary spring tides, and the number and length of wharves at 30th June, 1921:—

Distance from Sydney in miles.	Port.	Average depths low water ordinary spring tides.		Wharves.	
		On Bar.	On inner crossing.	No.	Length.
		ft. in.	ft. in.		feet.
374	Tweed River (b) ... ..	5 0	7 0	2	185
345	Byron Bay (a)* ... ..	...	...	1	1,450
331	Richmond River (b) ... ..	12 3	11 3½	3	1,000
296	Clarence River (b) ... ..	11 4	11 10	42	1,845
254	Woolgoolga (a)* ... ..	...	...	1	1,560
240	Coff's Harbour (a)* ... ..	...	...	1	1,760
230	Bellinger River (b) ... ..	6 0	6 3	2	160
223	Nambucca River (b) ... ..	8 0	4 6	8	1,440
216	Macleay River (b) ... ..	7 5	8 1	13	780
209	Trial Bay (a) ... ..	...	...	...	...
174	Hastings River (Port Macquarie) (b) ... ..	7 0	5 6	7	315
159	Camden Haven (b) ... ..	5 9	4 3	4	255
147	Crowdy Bay (a) ... ..	...	...	...	...
144	Manning River (b) ... ..	8 0	4 0	13	650
123	Port Forster (b)* ... ..	3 9	6 0	5	1,100
109	Sugarloaf Bay (Seal Rocks) (a) ... ..	...	...	...	...
83	Fly Road (Port Stephens) (n) ... ..	27 0	...	1	120
62	Port Hunter (b)* ... ..	23 6	...	25	21,971
49	Lake Macquarie (b) ... ..	6 0	4 0	3	116
19	Broken Bay (n) ... ..	...	...	...	...
—	Port Jackson (n)* ... ..	40 0	...	185	60,861
12	Botany Bay (a) ... ..	...	...	2	...
44	Wollongong (art)* ... ..	14 0	...	3	860
48	Port Kembla (a)* ... ..	...	...	3	...
53	Shellharbour (art)* ... ..	6 0	...	1	180
59	Kiama (art)* ... ..	18 0	...	3	1,185
74	Crookhaven (b) ... ..	15 0	9 6	3	220
82	Jervis Bay (n) ... ..	...	...	...	...
108	Ulladulla (art)* ... ..	...	...	1	150
134	Bateman's Bay (b) ... ..	5 6	...	3	142
141	Moruya River (b) ... ..	8 0	5 6	2	80
157	Narooma (Wagonga Inlet) (b) ... ..	5 0	5 3	7	280
163	Bermagui Bay (a)* ... ..	...	...	1	180
186	Tathra Bay (a)* ... ..	...	...	1	180
197	Merimbula (b)* ... ..	...	...	1	180
208	Twofold Bay (Eden) (a)* ... ..	...	...	1	560

(a) Denotes anchorage. (b) Bar harbour. (art) Artificial harbour. (n) Natural harbour.  
\* Maintained by the Government.

As shown in the above table, certain wharves are maintained by the Government, the remainder being under the control of the Shires and Municipalities in which they are situated.

In the following statement, which shows the length of coast-line, area, and width of the entrances of the principal harbours of New South Wales, the most striking feature to be noticed is the great length of the coast of Sydney Harbour in comparison with its area; its area is only half that of Jervis Bay, but its coast-line is six times as long.

Harbour.	Length of Coastline.	Area.	Distance across Entrance.
	miles.	acres.	chains.
Port Jackson—			
Including tidal waters, all branches ... ..	188	14,260	...
Including foreshores below Iron Cove Bridge, Gladesville Bridge, Lane Cove Bridge, and below the "Spit," Middle Harbour ... ..	75	8,980	75
Port Hunter—			
On the western side, as far up as Port Waratah, omitting Throsby Creek, and on the eastern side, below a point due east of the south end of Moscheto Island...	8	990	19
Port Stephens—			
Omitting Karuah and Myall Rivers ... ..	92	32,000	60
Broken Bay—			
Below railway bridge (G.N.R.), and omitting Cowan Creek, Mullet Creek, Cockle Creek, and Brisbane Water ... ..	62	14,500	190
Botany Bay—			
Excluding Quibray and Weeney Bays, also George's River and Cook's River ... ..	17	10,290	58
Jervis Bay—			
Omitting tidal creek ... ..	31	30,800	185
Port Hacking—			
Below a line across at the eastern side of Ewey Bay, and omitting West Arm Creek and Cabbage Tree Creek	21	2,330	58
Twofold Bay—			
West of a line joining Worange Point and Red Point ...	15	7,580	248

## PRIVATE FINANCE.

## MINTING.

The Royal Mint of England has three branches in Australia, viz., one each at Sydney, Melbourne, and Perth. The earliest branch, at Sydney, was opened on the 14th May, 1855.

Gold coins only are struck at the Sydney Mint; silver and bronze Australian coins are struck at the London Mint and forwarded to the Sydney Branch, for distribution at the order of the Commonwealth Treasurer. The value of gold coin and bullion issued up to the end of 1920 was £147,399,157, of which £140,326,500 represented coin, the value of sovereigns being £135,545,500, and of half-sovereigns, £4,781,000. Coins of the latter denomination were not issued from 1917 to 1920.

The gold bullion issued from the Mint includes pure gold in small quantities for industrial use, but the bulk consists of bars of fine gold issued to local banks. The amount of gold bullion issued during 1920 was valued at £109,405, the total from 1855 to the end of 1920 being 1,718,225 oz., valued at £7,072,657.

The first issue of bronze coin from the Sydney Mint took place in 1868, and of silver in 1879, the values of each to the end of the year 1910 being bronze £106,450, and silver £1,239,400. The issue of British silver and bronze coin in the Commonwealth ceased in 1910, and Australian coins were first issued in that year.

Australian silver and bronze coins issued to the end of 1920 from the Sydney Mint were valued at £1,416,870. Silver coins have not been issued since 1918, but the value of bronze coinage issued for the two years ended December, 1920, was £21,330.

The coinage or nominal value of silver per standard ounce is 5s. 6d., and the average London market price per ounce during 1920 was 5s. 1.21d., the difference, 0s. 4.79d., representing the seigniorage, or gross profit. After allowing for mint expenses, the net profit accrues to the Commonwealth Government, which received £33,123 and £20,608 respectively as net profits from Australian silver and bronze coinage in 1920. The average price of standard silver in the London market in each year since 1911 has been as follows:—

Year.	Price of Silver per standard oz.	Year.	Price of Silver per standard oz.
	s. d.		s. d.
1911	2 0.56	1916	2 7.28
1912	2 4.06	1917	3 4.93
1913	2 3.56	1918	3 11.77
1914	2 1.19	1919	4 10.31
1915	1 11.67	1920	5 1.21

Light gold coins in parcels of not less than £50 nominal value are received and recoined free of charge, but depositors are required to bear the loss by abrasion. The nominal value of the gold coin withdrawn from circulation during 1915 was £663, and for the whole period since the opening of the Mint £1,084,327. No gold coins were withdrawn during the years 1916 to 1920.

Worn British silver coin of the value of £56,500 was withdrawn from circulation through the Sydney Mint during 1920, and the aggregate value withdrawn to the end of that year was £705,072. No Australian silver coins have yet been withdrawn from circulation.

The receipts of the Mint are paid into the Consolidated Revenue of New South Wales, and represent charges for coining gold, fees for assays, &c., and profits on the sale of silver. The Mint retains all silver contained in deposits, but payment is made for all silver in excess of 8 per cent. of the gross weight at a rate fixed by the Deputy Master. The price paid from the 3rd February, 1921, was 2s. 6d. per ounce fine.

For assaying and coining gold the charge is 1d. per ounce standard, and a charge is made for melting and refining gold insufficiently treated for direct conversion into coin, the maximum being at the rate of 3d. per ounce gross, and the minimum 1d., with an additional 1s. per ounce on deposits containing more than 5 per cent. of base metal. The minimum charge on any one deposit is 6s., except in the case of deposits containing more than 5 per cent. of base metal, when the minimum charge is 10s. 6d.

The cost of maintenance of the Sydney Branch of the Royal Mint is borne by the State Government, a statutory endowment of £15,000 being set apart annually for that purpose, and additional sums are appropriated when required, the total grants for 1920 being £18,425. Special votes for construction, repairs, and furniture expended by other departments have also been made. The expenditure from Consolidated Revenue during 1920 amounted to £18,113, and the total receipts amounted to £6,793, showing a net loss to the State of £11,320 on the year's transactions.

#### CURRENCY AND COINAGE.

The coins current in New South Wales in 1909, when the Commonwealth Coinage Act was passed, corresponded with those of the monetary system of the United Kingdom, and were issued by the Royal Mint of England through its Sydney Branch.

The Commonwealth Treasurer was given power under that Act to issue silver and bronze coin of specified denominations. A nickel coinage was also authorised, but has not been issued. The principal variation of the Australian from the British system is the elimination of the half-crown from the silver coinage of the Commonwealth.

A tender of payment made in British or Australian gold coins is legal for any amount, in silver coins for a maximum amount of forty shillings, and in bronze for a maximum amount of one shilling.

For gold coins the standard fineness is  $\frac{11}{12}$  fine gold,  $\frac{1}{12}$  alloy, or millesimal fineness 916.6; for silver coins,  $\frac{37}{100}$  fine silver,  $\frac{3}{100}$  alloy, or millesimal fineness 925; bronze coins are of mixed metal—copper, tin, and zinc.

Standard or sovereign gold of 22 carats fineness is worth £3 17s. 10½d. per ounce, which is the price paid for the gold contained in deposits sent to the Sydney Branch of the Royal Mint for melting, assaying, and coining; pure or 24-carat gold is worth £4 4s. 11½d. per oz.

The nominal value of one ounce of silver coined into eleven sixpences is 5s. 6d., and of one pound (avoirdupois) of bronze coined into pence 4s., and into half pence or farthings 3s. 4d.

#### PAPER CURRENCY.

##### *Bank Notes.*

Prior to 1910 the control of paper currency was vested in private banking institutions which had used their right to issue bank notes. The original purpose of the note issue was to obviate the necessity for keeping gold

reserves in branch banks, and originally the circulation was confined practically to country districts. In New South Wales the note currency is subject to a tax at the rate of 2 per cent. per annum, and the Commonwealth Government has imposed a further 10 per cent. tax, with the result of practically forcing the notes of the trading banks out of circulation.

The total liability in notes and bills of banking institutions operating in New South Wales in 1900, and at intervals since 1910, is shown in the following table, the figures being given as recorded for the quarter ended the 31st December of each year:—

Year.	Amount in Circulation.		
	Notes.	Bills.	Total.
	£	£	£
1900	1,447,641	209,905	1,657,546
1910	2,243,128	370,199	2,613,327
1915	91,559	426,597	518,156
1921	69,562	929,175	998,737

#### *Australian Notes.*

As a consequence of the Australian Notes Acts, 1910–1914, the Commonwealth Treasurer was authorised to issue notes, which are legal tender throughout the Commonwealth, and are redeemable in gold at the seat of the Federal Government. These notes were issued in the following denominations:—10s., £1, £5, £10, and any multiple of £10. The Acts were repealed by the Commonwealth Bank Act, 1920, which provided for the establishment of a Note Issue Department of the Bank, under the management of a Board composed of the Governor of the Bank (Chairman), and three other directors, to which all the assets and liabilities of the Treasurer under the Australian Notes Act were transferred. The Board may print, issue, re-issue, and cancel Australian notes, and must hold in gold coin and bullion a reserve of not less than one-fourth of the amount of notes issued, and 5s. notes were also authorised to be circulated, if required.

The value of the Australian notes in circulation and the gold reserve held for the five years ended 30th June, 1921, are shown in the following statement:—

Year Ended.	Notes in Circulation.	Gold Reserve.	
		Total.	Percentage to Note Circulation.
	£	£	£
June, 1917.....	47,201,564	15,244,592	32.29
„ 1918.....	52,535,959	17,659,754	33.61
„ 1919.....	55,567,423	24,273,622	43.68
„ 1920.....	56,949,030	23,658,092	41.54
„ 1921.....	58,228,070	23,844,394	40.95

#### MONEY ORDERS AND POSTAL NOTES.

Exchange by means of money orders and postal notes is conducted by the Post and Telegraph Department of the Commonwealth. Remittances may be forwarded by money order from the principal post offices in New South Wales to other parts of the world, either direct to the place of payment if within the Commonwealth, or through intermediary agencies to places



outside Australia. The money-order system was initiated in January, 1863, and in that year there were 3 orders issued for every hundred persons in New South Wales, the total value being £53,682. During the year ended the 30th June, 1921, the total number of orders issued was 1,113,644, or 53 for every one hundred persons, and the total value £5,829,758, as shown in the following statement :—

Where Payable.	Issued in New South Wales.		Where Issued.	Paid in New South Wales.	
	No.	Value.		No.	Value.
		£			£
In New South Wales	912,443	4,809,290	In New South Wales	902,752	4,796,171
In other States ..	111,635	605,471	In other States ...	140,744	806,808
Beyond the Commonwealth.	89,566	414,997	Beyond the Commonwealth.	60,144	294,479
Total ...	1,113,644	5,829,758	Total ...	1,103,640	5,897,458

The commission ranges from 6d. for amounts not exceeding £2, to 2s. for amounts above £17 and up to £20 if payable in the Commonwealth; the charges for money orders payable in the United Kingdom are 6d. up to £2 and 3d. for each additional £1, and special rates are chargeable for the United States. The money-order and postal-note systems are both effective with regard to remittances within the State, but as public convenience for small sums is met by postal note, money-orders are confined almost entirely to amounts exceeding £1.

Postal notes were first issued in New South Wales on the 1st October, 1893. The total number issued during the year ended the 30th June, 1921, was 4,530,448, of which 3,129,963 were for payment in the State, and 367,086 notes issued in other States were cashed in New South Wales. The commission ranges from  $\frac{1}{2}$ d. on notes up to 1s. 6d. in value to 3d. on notes for amounts ranging from 10s. to £1. The poundage collected on postal-notes in New South Wales during the financial year 1920-1 was £30,259.

The transactions in 1895 and in subsequent years were as follow :—

Year.	New South Wales Postal Notes.			Postal Notes of Other Australian States Paid in New South Wales.
	Paid in New South Wales.	Paid in Other Australian States	Total Value.	
	£	£	£	£
1895	243,188	16,369	259,557	13,362
1900	462,087	26,396	488,483	25,362
1905	637,465	85,703	723,168	87,203
1910	910,136	182,000	1,092,136	129,304
*1916	1,155,445	266,770	1,422,215	123,057
*1921	1,210,980	352,244	1,563,224	138,142

\* Year ended 30th June.

## BANKS.

Institutions which transact banking business are required under the Banks and Bank Holidays Act to furnish in a prescribed form, quarterly statements of their assets and liabilities, and in 1921 they were required to furnish special returns under the Census Act of 1901. From these returns, and from the periodical balance-sheets issued by the banking companies, the information contained in the following tables has been prepared.

There are sixteen banking institutions, including the Commonwealth Bank of Australia, which transact ordinary business within the State, but the tables deal with the returns of thirteen banks only except when otherwise specified.

*Capital and Profits.*

The paid-up capital of the banks doing business in New South Wales on the 30th June, 1921, exclusive of the Commonwealth Bank of Australia, the Comptoir National d'Escompte de Paris, and the Yokohama Specie Bank, was £27,040,769.

The following table shows the amount of the paid-up capital and reserve funds, not including balances of profit and loss accounts, at intervals since 1895. The paid-up capital represents the amount contributed to each bank operating in New South Wales (excepting those mentioned in the paragraph), irrespective of the countries in which it was subscribed:—

Year.	Banks.	Capital Paid up.	Reserve Funds.	Year.	Banks.	Capital Paid up.	Reserve Funds.
		£	£			£	£
1895	13	19,704,957	4,175,912	1915	15	18,891,145	12,984,000
1900	13	16,807,069	4,529,109	1920	14	22,944,369	17,410,000
1905	13	13,965,931	5,474,199	1921	13	27,040,769	17,455,000
1910	15	16,193,550	8,462,235				

The decrease in the year 1905 was due to the writing down of the capital of certain banks. During the next period the capital was materially increased by additional calls on shares, and by the commencement of operations in the State by two other banks. Against these increases must be placed the estimated deficiency in connection with the Special Assets Trust Company of the Commercial Bank of Australia.

The amount of dividend paid during 1895 and subsequent years by the thirteen banks to which the preceding table relates is shown below, also the average rate per cent. of dividend in relation to paid-up capital and reserves, including profits carried forward:—

Particulars.	1895.	1905.	1915.	1920.	1921.
Amount of dividend paid during year ...	£ 540,409	£ 893,288	£ 1,773,232	£ 2,299,379	£ 2,735,923
Average rate per cent. per annum of dividend ...	2.22	4.44	5.32	5.39	5.99

*Liabilities within New South Wales.*

The following statement shows the average liabilities of all the banks within New South Wales, exclusive of those to shareholders. Up to 1905 the figures for December quarter are given; from 1910 onward those for

June quarter are shown, and since 1915 the interest-bearing deposits include savings banks deposits in the Commonwealth Bank of Australia:—

Year.	Notes.	Deposits.			Other Liabilities.	Total Liabilities within N.S.W.
		At Interest.	Without Interest.	Total Deposits.		
	£	£	£	£	£	£
1890	1,503,404	25,114,127	9,932,310	35,046,437	278,792	36,828,633
1895	1,223,864	20,406,822	10,222,437	30,629,259	183,929	32,037,052
1900	1,447,641	20,909,081	12,224,510	32,233,591	288,499	33,969,731
1905	1,430,335	22,211,627	14,859,427	37,071,054	353,673	38,860,062
1910	1,801,807	26,642,873	23,512,712	50,155,585	471,233	52,428,625
1915	95,505	35,031,367	33,186,317	68,217,684	1,653,801	69,968,990
1920	73,265	50,495,134	52,878,126	103,373,260	2,562,273	106,008,799
1921	71,654	54,631,451	53,044,965	107,676,416	3,661,412	111,403,482

The value of notes in circulation has declined since 1910, a result due to the issue of the paper currency of the Commonwealth, and the consequent recall of notes issued by trading banks.

At the 30th June, 1921, deposits represented 96·7 per cent. of the liabilities (exclusive of those due to shareholders), and deposits not bearing interest 49·3 per cent. of the total deposits; corresponding figures for previous years were as under:—

Year.	Proportion of Deposits Not Bearing Interest to Total Deposits.	Proportion of Total Deposits to Liability to Public.	Year.	Proportion of Deposits Not Bearing Interest to Total Deposits.	Proportion of Total Deposits to Liability to Public.
	per cent.	per cent.		per cent.	per cent.
1890	28·4	95·1	1910	53·1	95·7
1895	33·4	95·6	1915	51·4	97·5
1900	37·9	94·9	1920	51·3	97·5
1905	40·1	95·4	1921	49·3	96·7

#### *Assets within New South Wales.*

The following table shows the average assets of all banks within New South Wales, and in order to institute a comparison between the figures of the various banks, necessary adjustments have been made by excluding from the assets the balances due from branches and agencies outside New South Wales:—

Year.	Coin, Bullion, and Australian notes.	Advances.	Landed Property.	Other Assets.	Total Assets within N.S.W.
	£	£	£	£	£
1890	5,659,057	41,623,049	1,601,589	2,795,100	51,679,795
1895	7,516,278	35,707,153	1,919,017	479,881	45,622,329
1900	6,126,126	34,385,388	1,874,099	650,814	43,036,427
1905	8,823,260	32,447,659	1,799,231	623,987	43,694,137
1910	12,980,593	37,482,907	1,824,349	1,014,456	53,302,305
1915	22,102,401	51,379,741	2,108,633	1,807,112	77,397,887
1920	23,484,721	89,063,144	2,477,601	4,246,969	119,272,435
1921	21,964,366	104,709,314	2,573,628	3,186,625	132,433,933

At the 30th June, 1921, coin and bullion together represented only 7·7 per cent. of the average assets of the banks, and advances represented in the aggregate 79·1 per cent. of the total assets held by the banks against their liabilities.

The proportion of metallic reserves which banking institutions should keep constantly on hand is not fixed by any enactment, and consequently the amount of coin and bullion varies considerably. The ratios of coin, bullion, and Australian notes for various periods from 1890 are shown below :—

Year.	Proportion of Coin, Bullion, and Australian Notes—		Year.	Proportion of Coin, Bullion, and Australian Notes—	
	To Total Liabilities.	To Deposits at Call and Note Circulation.		To Total Liabilities.	To Deposits at Call and Note Circulation.
	per cent.	per cent.		per cent.	per cent.
1890	15·4	49·5	1915	28·6	66·4
1895	16·5	34·7	1920	19·7	44·4
1900	18·0	44·8	1921	19·7	41·3
1910	24·8	51·3			

*Deposits and Advances by Banks.*

Under the head of advances are included notes and bills discounted, and all other debts due to the banks. The bulk of the advances are secured by the mortgage of real estate, or by the deposit of deeds over which the lending institutions acquire a lien, but the extent to which trade bills are discounted is not disclosed. The following table supplies a summary of these transactions at various dates from 1890 :—

Year.	Deposits.	Advances.	Ratio of Advances to Deposits.	Advances per cent. of Total Assets.	Amount of Advances per Head.
	£	£	per cent.		£ s. d.
1890	35,046,437	41,623,049	118·8	80·5	37 2 0
1895	30,629,258	35,707,153	116·6	78·3	28 5 9
1900	32,233,591	34,385,388	101·2	79·9	25 4 0
1905	37,071,054	32,447,659	87·5	74·3	22 1 9
1910	50,155,585	37,482,907	74·7	70·3	23 4 6
1915	68,217,684	51,379,741	75·3	66·6	27 3 6
1920	103,373,260	89,063,144	86·2	74·7	43 1 2
1921	107,676,416	104,709,314	97·2	79·1	49 15 10

In June quarter, 1921, the advances showed an increase over the previous year's figure of £15,646,170, the average annual increase during the previous quinquennium being over £8,300,000, and the amount per head increased by £6 14s. 8d., while the ratio of advances to total assets increased by 4·4 per cent. over that of the previous year.

Deposits increased by £4,303,156, and the ratio of advances to deposits rose from 86·2 to 97·2 per cent.; the fixed deposits increased by £4,136,317, and the deposits without interest by £166,839.

A classification of fixed deposits and of current accounts according to the amount of deposit at or about 30th June, 1921, is shown below, the figures

being exclusive of particulars of the Commonwealth Bank, which are not available. The absence of these particulars probably does not affect the table seriously, as the bulk of the accounts, both current and fixed, in the Commonwealth Bank consists of large amounts, deposited by the Governments of the Commonwealth and of three of the States.

Classification.	Current Accounts.		Fixed Deposits.		Total Deposits.	
	Number of Depositors.	Amount of Deposits.	Number of Depositors.	Amount of Deposits.	Number of Depositors.	Amount of Deposits.
		£		£		£
£200 and under ...	146,335	7,083,479	18,713	2,242,506	165,048	9,325,985
£201- £500 ...	21,798	6,912,274	13,658	4,887,814	35,456	11,800,088
£501- £1,000 ...	8,943	5,996,398	8,078	6,194,918	17,021	12,191,316
£1,001- £2,000 ...	3,818	5,223,688	3,382	4,992,443	7,200	10,216,131
£2,001- £3,000 ...	1,105	2,653,251	881	2,290,851	1,986	4,944,102
£3,001- £4,000 ...	472	1,601,534	310	1,129,058	782	2,730,592
£4,001- £5,000 ...	254	1,132,767	439	2,134,216	693	3,266,983
£5,001-£10,000 ...	450	2,994,524	495	4,071,056	945	7,065,580
£10,001-£15,000 ...	125	1,528,821	110	1,313,136	235	2,841,957
£15,001-£20,000 ...	44	778,139	37	695,115	81	1,473,254
Over £20,000 ...	86	5,255,616	83	11,350,836	169	16,606,452
Total ...	183,430	41,160,491	46,186	41,301,949	229,616	82,462,440

The following table shows the percentages of each group, and it will be seen that of the total number of depositors there were 87 per cent. whose deposits did not exceed £500, and the money held on their account represented 26 per cent. of the total deposits; depositors of £2,000 and under represented 98 per cent. of the total, and their money 53 per cent. of the deposits. Small deposits were more numerous in current accounts, of which 80 per cent. did not exceed £200 as compared with 40 per cent. of the fixed deposits, the amounts of their deposits being 17 per cent. and 5 per cent. respectively of the total deposits. Persons wishing to place small sums of money at interest generally avail themselves of the facilities offered by the savings banks.

Classification.	Proportion of Depositors in each Group.			Proportion of Deposits in each Group.		
	Current Accounts.	Fixed Deposits.	Total Deposits.	Current Accounts.	Fixed Deposits.	Total Deposits.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
£200 and under ...	79.8	40.5	71.9	17.2	5.4	11.3
£201- £500 ...	11.9	29.6	15.5	16.8	11.8	14.3
£501- £1,000 ...	4.9	17.5	7.4	14.6	15.0	14.8
£1,001- £2,000 ...	2.1	7.3	3.2	12.7	12.1	12.4
£2,001- £3,000 ...	.6	1.9	.8	6.4	5.5	6.0
£3,001- £4,000 ...	.3	.7	.3	3.9	2.7	3.3
£4,001- £5,000 ...	.1	.9	.3	2.7	5.2	4.0
£5,001-£10,000 ...	.2	1.1	.4	7.3	9.9	8.6
£10,001-£15,000 ...	.1	.2	.1	3.7	3.2	3.5
£15,001-£20,000 ...	...	.1	...	1.9	1.7	1.8
Over £20,000 ...	...	.2	.1	12.8	27.5	20.0
Total ...	100	100	100	100	100	100

## INTEREST, DISCOUNT, AND EXCHANGE RATES.

The interest on fixed deposits during 1921 was 4 per cent. for sums deposited for six months; for twelve months' deposits the rate was  $4\frac{1}{2}$  per cent., and for two years, 5 per cent.

Under normal conditions the rate of interest paid on fixed deposits is uniform for all banks, and discount and overdraft rates fluctuate with the interest paid to depositors.

The bank exchange rate on London, at sixty days' sight, is on the average about 1 per cent., but it is subject to some variations.

The interest rates allowed on deposits for twelve months, and charged on overdrafts, also the discount and exchange rates at intervals from 1890 to 1921 were as follow :—

Year.	Bank Rates of Interest.		Bank Discount Rates.		Exchange Rate on London at 60 Days' Sight.	
	Allowed on Deposits for Twelve Months.	Charged on Overdrafts.	Bills at Three Months.	Bills over Three Months.	Buying.	Selling.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1890	$4\frac{1}{2}$	9	7	8	99 $\frac{3}{4}$ to 100	100 $\frac{3}{4}$ to 101 $\frac{1}{4}$
1900	3	6 to 7	5 to 5 $\frac{1}{2}$	5 $\frac{1}{2}$ to 6 $\frac{1}{2}$	98 $\frac{1}{4}$ „ 99 $\frac{1}{2}$	100 $\frac{1}{4}$ „ 100 $\frac{3}{4}$
1910	3	6 „ 7 $\frac{1}{2}$	5 „ 6	6 „ 7	98 $\frac{1}{4}$ „ 99	99 $\frac{3}{4}$ „ 99 $\frac{7}{8}$
1915	$3\frac{1}{2}$ to 4	6 „ 8	5 „ 6	6 „ 7	98 $\frac{1}{4}$ „ 99 $\frac{1}{2}$	100 $\frac{1}{4}$ „ 100 $\frac{3}{4}$
1920	4 to $4\frac{1}{2}$	6 „ 8	5 „ 6	6 „ 7	98 „ 99 $\frac{1}{4}$	99 $\frac{3}{4}$ „ 100 $\frac{3}{4}$
1921	$4\frac{1}{2}$	6 „ 8	5 „ 6	6 „ 7	98 $\frac{3}{4}$ „ 99 $\frac{1}{2}$	100 $\frac{3}{4}$ „ 100 $\frac{7}{8}$

*Banks' Exchange Settlement.*

The Banks' Exchange Settlement Office, which was established in Sydney on the 18th January, 1894, is not a clearing-house in the accepted meaning of the term, since the exchanges are effected daily at the banks by the staff of each institution. The results of these operations are notified to the secretary of the Banks' Exchange Settlement, who establishes the daily credit of each bank with the "pool," which is under the control of three trustees, and consists of £750,000 in gold. This money is deposited in the vaults of three of the banks, and may not be circulated or distributed. The contributions to the "pool" are graduated according to the volume of the operations of the individual bank. The secretary notifies each institution daily of the amount of its credit with the "pool," and it is not permissible for any balance to remain below 25 per cent. of the fixed contribution. In the event of it reaching this margin, the bank is required to make up the deficiency with gold. The payment, however, is not made to the "pool," but to such other banks as may happen to have to their credit with the "pool" a larger sum than is required by the agreement. This arrangement retains the "pool" intact.

The growth in the volume of exchanges is shown in the following table :—

Year.	Amount of Exchanges.	Year.	Amount of Exchanges
	£		£
1895	108,509,860	1915	357,803,425
1900	144,080,314	1920	764,546,357
1910	274,343,666	1921	709,734,554

The transactions of this office have grown steadily since its establishment, and the large annual increases indicate a remarkable activity in trade, and afford an accurate commentary on the growth of the general prosperity of the State.

#### COMMONWEALTH BANK OF AUSTRALIA.

During 1911 the Federal Parliament passed an Act to provide for the establishment of a Government Bank, to be called the Commonwealth Bank of Australia. The Act confers on the Bank authority, to carry on general banking business, and to exercise the functions of an ordinary bank of issue. In accordance with the policy of conserving the control of the Australian note issue in the hands of the Federal Treasurer, the bank was not authorised to issue notes until 1920, when, as stated on a previous page, the administration of the note issue was transferred to the Bank, and a separate department was established for its control.

The capital of the bank is fixed at £10,000,000, to be raised by the issue and sale of debentures, but no debentures have yet been issued. In addition to ordinary banking, a department for the transaction of savings bank business has been established.

The bank was inaugurated on the 15th July, 1912, by the opening of a postal savings bank department, but the ordinary banking business was not commenced until the 20th January, 1913.

The head office of the Commonwealth Bank is at Sydney, but the bank has offices and agencies throughout the States and Papua, as well as in New Zealand, London, Rabaul, and other parts of the world. Savings bank business is conducted at all the branches, and at agencies and post offices throughout the Commonwealth, Papua, and New Zealand.

The following statement shows the liabilities and assets of the Commonwealth Bank in New South Wales in the June quarter of each of the last five years:—

Particulars.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
<b>Liabilities—</b>					
Deposits at interest—					
Savings Department	3,533,812	4,237,590	5,139,350	5,296,606	6,308,826
Ordinary ...	1,381,626	2,456,097	6,309,694	8,890,139	7,477,994
Deposits without interest...	13,492,367	10,628,957	7,951,358	7,940,199	7,957,402
Total deposits ...	18,407,805	17,322,644	19,400,402	22,126,944	21,744,222
Other liabilities ...	396,797	346,465	386,370	119,409	176,645
Total Liabilities ...	18,804,602	17,669,109	19,786,772	22,246,353	21,920,867
<b>Assets—</b>					
Coin and Bullion ...	633,260	1,327,363	1,117,214	801,713	559,052
Australian Notes ...	5,447,775	4,502,707	4,852,941	1,319,167	1,618,772
Advances ...	10,020,916	13,537,531	18,112,713	18,938,721	21,855,509
Landed Property ...	299,365	317,495	285,261	303,336	335,054
Other Assets ...	1,167,128	1,539,918	3,357,828	1,994,964	1,646,467
Total Assets ...	17,568,444	21,225,014	27,725,957	23,357,901	26,014,854

## GOVERNMENT SAVINGS BANK OF NEW SOUTH WALES.

The Government Savings Bank of New South Wales is under the control of three Commissioners, and in addition to the Savings Department, they conduct business in connection with advances to farmers and others. The work of the Advance to Settlers Board relating to loans was transferred to the Commissioners as from 1st January, 1907, and departments were established for advances in connection with Closer Settlement Promotion, Irrigation Farms, and Homes. The conditions under which advances to settlers and to irrigation farmers are made will be found in the part relating to Agriculture. The work of the Closer Settlement Department was transferred to the Department of Lands as from 1st July, 1919, and details are shown in the part relating to Land Settlement.

The Irrigation Farms Advance Department formerly provided financial aid to settlers in the irrigation areas, but these farmers may now obtain loans from the Rural Bank, as the accounts of the first-mentioned Department are amalgamated with those of the Rural Bank.

Advances for Homes are made to enable persons to acquire homes or to pay off existing mortgages, particulars of which are shown in the part relating to Social Condition.

In 1921 the departments of the bank were re-organised in terms of the Government Savings Bank (Rural Bank) Act, 1920, and business is now conducted in three separate departments, viz., the Savings, the Rural Bank, and the Advances for Homes. In the Rural Bank Department the Commissioners may accept money on current account to be operated on by cheque, receive fixed deposits at interest, issue deposit stock bearing interest and repayable on notice, and with the approval of the Governor, the operations may be extended to include the general business of banking.

The main purpose of the Rural Bank is to afford financial assistance to primary producers, and advances may be made to new settlers on the basis of £ for £ on improvements, up to a maximum of £5,000. When deposits provide funds for lending purposes, overdrafts will be granted on approved security to persons concerned in rural pursuits.

The loans current in each department of the bank at the end of the last five years were as follows:—

30th June.	Savings Bank.	Rural Bank.	Advances for Homes.	Total Loans by Government Savings Bank.
	£	£	£	£
1917	2,376,288	2,522,674	730,125	5,629,087
1918	2,263,279	2,544,054	983,160	5,790,493
1919	2,113,188	2,599,751	1,415,635	6,123,574
1920	1,929,974	2,903,885	2,176,583	7,010,442
1921	2,219,908	3,423,871	3,173,751	8,817,530

The figures in the above table have been altered since last issue, owing to the transfers of administration mentioned above.

On the 30th June, 1921, there were 148 branches and 511 agencies of the Government Savings Bank; the number of accounts was 918,005, the balance at the credit of depositors, £50,802,137; and the interest paid to



depositors during the year, £1,736,603. A classification of the deposits as at 30th June, 1921, is shown hereunder:—

Classification.	Number of Depositors.	Amount of Deposits.	Proportion in each Group.	
			Depositors.	Deposits.
	£	£	per cent.	per cent.
£100 and under ... ..	767,786	10,348,497	83·6	20·4
£100—£200 ... ..	68,335	9,482,022	7·4	18·7
£200—£300 ... ..	36,247	8,517,650	4·0	16·7
£300—£400 ... ..	15,649	5,370,090	1·7	10·5
£400—£500 ... ..	10,583	4,710,753	1·2	9·3
Over £500 ... ..	19,405	12,373,125	2·1	24·4
Total ... ..	918,005	50,802,137	100	100

Particulars similar to the above for the Commonwealth Bank are not available, but that bank accepts deposits up to £1,000 with interest at the rate of 3½ per cent.

In the New South Wales Government Savings Bank deposits under £100 represented about 20 per cent. of the total amount, deposits between £100 and £500 about 55 per cent., and sums over £500 about 25 per cent. The rate of interest paid since 1st July, 1921, has been 4 per cent. on sums up to £500 for all accounts, and 3½ per cent. on any excess up to £1,000 on personal accounts, but without limit on the accounts of Friendly Societies, Trade Unions, and institutions or associations not carried on for trade or profit.

Combining the figures shown above with those of a similar table for trading banks, as shown on page 292, it will be seen that, excluding the Commonwealth Bank, there were 964,191 deposits at interest amounting in the aggregate to £92,104,086; of these 854,834 or 89 per cent., representing £22,073,025 or 24 per cent. of the value, did not exceed £200, and deposits not exceeding £500 represented 97 per cent. of the total number and 49 per cent. of the total value. If current accounts are taken into consideration, the proportion not exceeding £200 is 87 per cent. of the number and 22 per cent. of the value, the corresponding figures for those not exceeding £500 being 96 per cent. and 45 per cent. respectively.

#### *Deposits in Savings Banks.*

The following statement shows the particulars of deposits in the savings banks in New South Wales at the end of each year of the decennium ended the 30th June, 1921. The returns of the savings department of the Commonwealth Bank are included in the figures for the last nine years.

At 30th June.	Number of Depositors.	Amount of Deposits.		
		Total.	Per Depositor.	Per head of Population.
		£	£ s. d.	£ s. d.
1912	577,232	26,539,640	45 19 6	15 4 3
1913	647,124	29,568,282	45 13 10	16 4 11
1914	717,737	33,167,523	46 4 3	17 13 11
1915	755,835	35,562,649	47 1 0	18 16 2
1916	806,882	37,363,272	46 6 1	19 15 0
1917	872,351	40,836,747	46 16 3	21 8 9
1918	920,337	43,039,012	46 15 3	22 3 3
1919	984,951	47,070,342	47 15 9	23 11 5
1920	1,053,893	49,933,535	47 7 9	24 2 10
1921	1,126,157	57,394,441	50 19 4	27 5 10

At 30th June, 1921, the deposits in the trading banks and the savings banks in New South Wales, including the Commonwealth Bank, amounted to £158,762,031, or £76 15s. 2d. per head of population.

An agreement exists between the various savings banks in Australia for the transfer of the money of depositors, and similar arrangements are in existence with the United Kingdom. This privilege is largely availed of by travelling depositors, and during the year ended 30th June, 1921, an amount of £108,612 was transferred to the Bank from other Australian and New Zealand banks, while transfers amounting to £97,186 were made to the Post Office Savings Banks of the United Kingdom.

The deposits in the Savings Banks in New South Wales compare favourably with those of other States, as the following table shows:—

State.	Depositors, 30th June, 1921.	Amount of Deposits in all Savings Banks.	Average Amount.	
			Per Depositor.	Per Head.
	No.	£	£ s. d.	£ s. d.
New South Wales ...	1,126,157	57,394,441	50 19 4	27 5 10
Victoria ... ..	1,072,554	48,970,989	45 13 2	31 17 8
Queensland ... ..	327,065	18,537,942	56 16 8	24 3 5
South Australia...	396,970	16,317,353	41 2 1	32 15 11
Western Australia ...	217,136	7,663,440	35 5 10	23 0 1
Tasmania... ..	115,502	4,159,522	36 0 3	19 12 5
Northern Territory ...	935	53,790	57 10 7	13 13 11
Total ... ..	3,256,319	153,147,477	47 0 7	28 1 6

Under the provisions of the Government Savings Bank Amendment Act of 1920, the proportion of liquid assets required to be held was increased from 15 to 20 per cent. The amount of funds actually available at call or short notice on the 30th June, 1921, was 20·197 per cent., which shows the strong position of the bank.

#### INCORPORATED COMPANIES.

The legislation relating to incorporated companies in New South Wales is contained principally in the Companies Act, 1899, the amending Acts of 1900, 1906, and 1907, the Companies (Death Duties) Act, 1901, and the Companies (Registration of Securities) Act, 1918. These enactments follow the general provisions of Imperial Acts relating to companies, with deviations embodying the results of local experience.

Under the Companies Act, 1899, the liability of members of limited companies may be fixed either by shares, or by guarantee; in unlimited companies no limitation is placed on the liability of members. A special feature of the Act is the embodiment of provisions for the formation and registration of companies in connection with the mining industry under the "No-Liability System," as previously defined in the No-Liability Mining Companies Act, 1896.

The formation of a company, association, or partnership of more than ten persons in a banking business, or of twenty in other businesses trading for profit, is prohibited, unless such company, association, or partnership is

registered under the Act, or incorporated under some other enactment, by royal charter, or by letters patent. Special provision is made for associations formed to promote commerce, art, science, religion, charity, or other useful or beneficial objects.

An important amendment of the company law was made in 1918, when the Companies (Registration of Securities) Act was passed to provide for the registration of debentures issued by companies.

The following particulars relating to companies are recorded for the past five years.

Year.	Limited Companies.			No-Liability Mining Companies.		
	New Companies.	Nominal Capital.	Total Fees received.	New Companies.	Nominal Capital.	Total Fees received.
		£	£		£	£
1916	156	4,187,075	3,068	7	125,000	40
1917	159	5,918,267	2,785	8	77,500	39
1918	221	6,428,907	4,013	15	238,500	51
1919	267	9,137,360	4,616	12	118,255	45
1920	801	61,654,857	16,417	26	862,100	84

#### CO-OPERATIVE TRADING SOCIETIES.

Societies formed for the mutual benefit and advantage of the members only are registered under the Building and Co-operative Societies Act, 1901.

The transactions of co-operative societies during the last five years are given in the following table:—

	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Number of Societies ...	46	44	44	50	67
Number of Members ...	38,370	40,791	43,239	43,381	48,313
<b>Liabilities—</b>	£	£	£	£	£
Share Capital ...	274,409	310,776	348,341	349,309	429,230
Reserves and Net Profits ...	156,468	171,542	194,914	223,160	262,831
Other Liabilities ...	168,254	166,256	184,100	216,014	262,258
Total Liabilities	£ 599,131	648,574	727,355	788,483	954,319
<b>Assets—</b>					
Freehold, Plant, etc. ...	188,518	202,880	211,342	219,439	258,301
Stock ...	281,746	313,826	352,327	377,946	450,817
Other Assets ...	128,867	131,868	163,686	191,098	245,201
Total Assets	£ 599,131	648,574	727,355	788,483	954,319

Considering the amount of capital invested, the results are sufficiently satisfactory to justify the further development of these institutions. The majority of existing societies are engaged in the sale of groceries, provisions, boots, and clothing, or in the manufacture and supply of food and other commodities in general use. Outside the Sydney metropolitan area most of the societies are in the mining districts.

During the year 1920-21 the sales amounted to £3,256,981, and the expenses including interest and depreciation, to £413,866, equal to 12·7 per cent. on the amount of sales. The balances of profit amounted to £259,125, but in seven cases there were losses amounting to £2,640. The profit on sales was at the rate of 7·9 per cent.

## BENEFIT BUILDING AND INVESTMENT SOCIETIES.

Under the existing law any number of persons may form a benefit building and investment society to enable members to erect or purchase dwellings, etc., by loans secured to the society by mortgage until the amount of the shares has been fully paid. These institutions are registered as permanent building societies or as Starr-Bowkett terminating building societies.

The aggregate liabilities, assets, &c., of permanent building societies for the last five years are shown in the following statement:—

	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Number of Societies ...	8	8	8	8	8
Liabilities—	£	£	£	£	£
Deposits... ..	488,051	485,139	485,910	485,764	496,298
Share Capital ... ..	287,502	291,375	293,012	298,920	327,322
Reserves... ..	146,469	143,125	138,102	142,705	158,879
Other Liabilities ... ..	34,362	43,791	53,117	57,435	48,939
Balance of Profit ... ..	27,465	31,557	52,826	63,171	67,666
Total ... ..	983,849	994,987	1,022,967	1,047,995	1,099,104
Assets—					
Advances ... ..	739,809	733,582	774,077	839,465	885,102
Other Assets ... ..	244,040	261,405	248,890	208,530	214,002
Total ... ..	983,849	994,987	1,022,967	1,047,995	1,099,104

The income of the societies operating in 1920-21 was £102,200, while the expenditure during the year amounted to £97,963.

Particulars relating to Starr-Bowkett Building Societies for the same years are shown below.

	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Number of Societies ...	109	106	114	119	133
Liabilities—	£	£	£	£	£
Members' Subscriptions	1,076,112	1,221,961	1,333,832	1,443,803	1,562,735
Other Liabilities ... ..	37,210	42,127	38,828	53,438	66,974
Balance of Profit ... ..	115,009	130,624	146,410	164,956	183,950
Total ... ..	1,228,331	1,394,712	1,519,070	1,662,197	1,813,659
Assets—					
Advances ... ..	1,127,296	1,290,341	1,401,392	1,521,008	1,656,706
Other Assets ... ..	101,035	104,371	117,678	141,189	156,953
Total ... ..	1,228,331	1,394,712	1,519,070	1,662,197	1,813,659

## FRIENDLY SOCIETIES.

The particulars relating to membership, sickness, and mortality of Friendly Societies will be found in the part of this volume relating to Social Condition. The following tables will, therefore, deal with these societies from a financial standpoint only.

*Receipts and Expenditure.*

The receipts and expenditure of Friendly Societies during the ten years ended the 30th June, 1921, are shown in the following statement:—

Year.	Receipts.				Expenditure.					
	Contributions.	Interest.	Other.	Total.	Sick Pay.	Funeral Donations.	Medical Attendance and Medicine.	Expenses of Management.	Other.	Total.
	£	£	£	£	£	£	£	£	£	£
1911	413,027	64,261	38,043	515,331	148,576	33,359	143,040	59,154	45,989	435,118
1912	456,097	69,599	32,493	558,189	166,270	40,828	157,821	66,445	42,654	474,058
1913	489,698	75,083	37,365	602,101	173,451	45,952	170,594	69,226	41,914	501,137
1914	496,961	89,707	34,915	612,583	172,796	44,446	182,398	87,358	39,463	526,371
1915	491,928	87,591	34,507	614,116	177,198	50,131	182,705	88,419	23,767	522,220
1916	508,033	95,193	28,545	631,781	172,497	61,566	178,926	89,630	35,718	538,357
1917	524,341	109,947	53,433	678,726	168,996	69,371	178,789	96,830	40,349	554,325
1918	543,269	117,941	114,895	776,105	183,735	84,663	183,370	96,939	116,838	662,595
1919	551,278	117,624	40,740	709,542	274,929	89,265	186,801	106,115	42,818	699,928
1920-21	887,279	191,613	76,985	1,155,877	297,051	80,201	317,221	199,390	68,039	961,211

The total amount disbursed during the eighteen months ended 30th June, 1921, on account of benefits amounted to £694,473, and these figures afford convincing evidence of the importance of the societies and of their value to the community. The increase in sick pay during 1919 was directly due to the epidemic of influenza, which caused greater loss to the societies than the war.

The total number of members who left Australia on active service was 17,722, of whom 3,091 were killed. Claimants for sick pay numbered 2,748, who received aid to the amount of £46,335, while the total amount paid for death benefits was £86,107.

*Accumulated Funds.*

The following comparative table shows the accumulated assets of all funds at the close of each of the last ten years.

Year.	Sickness and Funeral Funds.	Medical and Management Fund.	Other Funds.	Total.
	£	£	£	£
1911	1,378,722	78,264	49,852	1,506,838
1912	1,463,502	82,538	51,713	1,597,755
1913	1,559,102	87,446	52,171	1,698,719
1914	1,641,704	88,256	54,971	1,784,931
1915	1,734,858	89,421	52,548	1,876,827
1916	1,820,708	101,092	48,471	1,970,271
1917	1,916,846	122,759	55,067	2,094,672
1918	1,954,085	190,995	63,102	2,208,182
1919	1,953,336	199,115	65,345	2,217,796
1920-21	2,134,330	194,358	83,065	2,411,762

Prior to 1916 the sickness and funeral funds were required to be kept separate, but legislation passed in that year provided that where such funds were administered by one central body for the whole society they should be deemed to be one fund.

The following statement shows the receipts, expenditure, and funds, of the Friendly Societies in each State of the Commonwealth, at the latest available date. The particulars for New South Wales include a number of miscellaneous societies, which are medical institutes and dispensaries,

registered under the Friendly Societies Act, though their benefits differ somewhat from those of the ordinary friendly society :—

State.	Receipts.	Expenditure.	Funds.	
			Total.	Per Member.
	£	£	£	£ s. d.
New South Wales ... ..	1,220,969	1,024,960	2,432,651	12 2 7
Victoria ... ..	681,232	564,220	3,173,678	22 3 10
Queensland ... ..	243,522	183,724	1,031,614	20 10 10
South Australia ... ..	301,222	219,043	1,501,346	21 9 3
Western Australia ... ..	100,591	88,824	294,120	15 15 0
Tasmania ... ..	92,555	82,828	280,315	12 1 6
Total, Commonwealth ...	2,640,091	2,163,599	8,713,724	17 0 11

#### INSURANCE.

In New South Wales insurance companies are subject to the Companies Acts, but there is no legislation dealing specifically with the conduct of insurance business. The Life, Fire and Marine Insurance Acts of 1902 and 1917 were passed to provide for the protection of life insurance policies and annuities against creditors, and the issue of special policies in substitution for those lost or destroyed. The section of the 1902 Act relating to marine insurance was superseded by the Commonwealth Marine Insurance Act of 1909, and the amount of assurance payable on the death of children was limited by a Commonwealth Act passed in 1905.

#### LIFE ASSURANCE.

Particulars relating to life assurance are obtained from the reports published by the companies, and from official returns collected under the Census Act of 1901.

During 1921 there were eighteen institutions operating in the State, and of these, nine were local, four had their head offices in Victoria, one in New Zealand, one in the United Kingdom, and three in the United States of America. Eight institutions are mutual, and ten are partly proprietary companies, whose policy holders, however, participate to some extent in the profits. Several companies, with head offices outside the Commonwealth, which unite life and other classes of insurance, have local branches or agencies, but their transactions in life risks in this State are unimportant.

#### *Ordinary Branch—New South Wales Business.*

The business in force in the ordinary branch during the year 1920 in New South Wales only is given below :—

Institutions with Head Office in—	Policies in Force, exclusive of Annuities.	Amount Assured, exclusive of Bonuses and Re-assurances.	Bonus Additions.	Total.	Annual Premiums Payable.
	No.	£	£	£	£
New South Wales ...	169,104	45,243,297	7,258,805	52,502,102	1,484,274
Victoria ...	47,842	11,017,204	211,171	11,228,375	418,599
New Zealand ...	666	70,775	*	70,775	2,902
United Kingdom ...	112	35,061	*	35,061	1,091
United States ...	4,442	2,143,828	75,618	2,219,446	66,981
Total ...	222,166	58,510,165	7,545,594	66,055,759	1,973,847

\* Not available.

Of the amount assured 96 per cent. is with the Australasian societies, 77 per cent. being with institutions with head offices in New South Wales, and 19 per cent. with Victorian institutions; and 4 per cent. is with the American companies. The amount held by the British society is comparatively small as it does not now accept life business in New South Wales. The average amount of assurance, exclusive of bonuses and re-assurances, per policy held in Australasian societies is £259, in the British £313, and in the American £483.

The business (exclusive of annuities) may be classified broadly in three categories (1), whole-life assurance payable at death only; (2), endowment assurance payable at the end of a specified period or at death prior to the expiration of the period; (3), endowment payable only in case of survival for a specified period.

Particulars regarding each class of assurance in the ordinary branch in force in 1919 and 1920 are shown below:—

Classification.	1919.				1920.			
	Policies in Force.	Amount Assured exclusive of Bonuses and Re-assurances.	Bonus Additions.	Annual Premiums Payable.	Policies in Force.	Amount Assured exclusive of Bonuses and Re-assurances.	Bonus Additions.	Annual Premiums Payable.
	No.	£	£	£	No.	£	£	£
Assurance...	87,444	33,534,943	5,141,726	1,045,809	91,780	36,002,932	5,437,652	1,111,078
Endowment Assurance	106,235	18,684,162	1,935,678	711,726	115,488	20,643,033	2,068,915	786,062
Endowment	14,227	1,734,046	33,213	71,245	14,898	1,864,200	39,027	76,707
Total...	207,906	53,953,151	7,110,617	1,828,780	222,166	58,510,165	7,545,594	1,973,847

The majority of the policies, viz., 52 per cent., represents endowment assurances, while whole-life policies were 41 per cent. and endowments 7 per cent. of the total number. The amount assured under the whole-life policies represents 62 per cent. of the total (exclusive of bonus additions), the average per policy being £392; endowment assurance policies, with an average of £179 per policy, cover 35 per cent. of the total amount assured; and endowment policies, with an average of £125 per policy, 3 per cent.

#### *Industrial Branch—New South Wales Business.*

In addition to the ordinary transactions in life assurance, a large industrial business has grown up during recent years. The policies in this class are usually for small amounts, and the premiums in most cases are payable weekly or monthly.

Industrial business in New South Wales is transacted only by Australasian companies, of which nine combine industrial with ordinary business, while one limits its operations to industrial and medical benefit transactions.

The following table shows the industrial business in force in New South Wales at the close of 1920:—

Institutions with Head Office in—	Policies in Force, exclusive of Annuities.	Amount Assured, inclusive of Bonuses.	Annual Premiums Payable.
	No.	£	£
New South Wales ...	214,363	6,715,377	393,002
Victoria ...	99,596	2,764,294	213,168
New Zealand ...	9,427	264,112	15,738
Total ...	323,386	9,743,783	621,908

In the industrial branch 73 per cent. of the number and 77 per cent. of the amount were held in the form of endowment assurance; and whole-life policies represented 24 per cent. of the number and 19 per cent. of the amount assured. The average amount per policy was £30, viz., assurance £24, endowment assurance £32, and endowment £28.

A classification of the industrial business in force in New South Wales in 1919 and in 1920 is shown below:—

Classification.	1919.			1920.		
	Policies in Force.	Amount Assured, inclusive of Bonus Additions.	Annual Premiums Payable.	Policies in Force.	Amount Assured inclusive of Bonus Additions.	Annual Premiums Payable.
	No.	£	£	No.	£	£
Assurance ... ..	75,339	1,754,804	97,750	76,405	1,846,946	100,274
Endowment Assurance ... ..	207,577	6,220,749	416,282	234,704	7,550,226	497,003
Endowment ... ..	11,657	301,233	21,634	12,277	346,611	24,631
Total ... ..	294,573	8,276,786	535,666	323,386	9,743,783	621,908

#### *Comparative Statements.*

The next statement shows the ordinary and industrial business in force in New South Wales in each of the last ten years, excluding bonuses and annuities:—

Year.	Ordinary Branch.			Industrial Branch.		
	Policies.	Amount Assured.	Annual Premiums Payable.	Policies.	Amount Assured.	Annual Premiums Payable.
	No.	£	£	No.	£	£
1911	159,928	37,591,311	1,212,409	156,194	3,411,133	205,886
1912	167,399	39,652,665	1,274,797	173,941	3,918,060	238,800
1913	17,834	41,432,591	1,382,162	191,333	4,413,289	273,997
1914	178,483	42,602,910	1,432,261	202,439	4,712,117	296,597
1915	181,671	43,520,335	1,465,347	211,881	5,000,021	318,306
1916	187,514	45,460,333	1,550,311	229,723	5,599,819	358,126
1917	192,962	47,636,307	1,644,692	248,037	6,298,106	404,836
1918	201,559	50,812,701	1,741,249	273,716	7,301,713	472,448
1919	207,906	53,953,151	1,828,780	294,573	8,275,956	535,666
1920	222,166	58,510,165	1,973,347	323,386	9,742,791	621,908



The number of ordinary policies per 1,000 of the population in 1920 was 106, as compared with 94 in 1911, and the sum assured increased from £22 1s. 9d. to £27 19s. 3d. per head of the population, as will be seen from the figures shown hereunder:—

Year.	Policies per 1,000 of Population.		Average Amount Assured Per Policy.		Average Annual Premium payable per Policy.		Amount Assured per Head of Population.	
	Ordinary.	Industrial.	Ordinary.	Industrial.	Ordinary.	Industrial.	Ordinary.	Industrial.
	No.	No.	£	£	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1911	94	92	235	22	7 11 7	1 6 4	22 1 9	2 0 1
1912	94	98	237	23	7 12 4	1 7 6	22 3 10	2 3 10
1913	94	104	238	23	7 19 0	1 8 8	22 8 10	2 7 7
1914	95	108	239	23	8 0 6	1 9 4	22 12 8	2 10 1
1915	96	112	240	24	8 1 4	1 10 1	22 19 3	2 12 9
1916	99	122	242	24	8 5 4	1 11 2	24 1 11	2 19 4
1917	100	129	247	25	8 10 6	1 12 8	24 15 10	3 5 7
1918	103	139	252	27	8 12 9	1 14 6	25 17 9	3 14 5
1919	102	144	260	28	8 15 11	1 16 4	26 9 2	4 1 2
1920	106	155	260	30	8 17 8	1 18 6	27 19 3	4 13 2

A feature of the above table is the large increase in industrial insurance, as since 1911 the number of these policies per 1,000 of the population rose from 92 to 155, and the amount assured from £2 0s. 1d. to £4 13s. 2d.

#### *New Business in New South Wales.*

The new business, ordinary and industrial, effected in New South Wales during the last five years is compared in the following table:—

Year.	Ordinary Branch.			Industrial Branch.		
	Number of Policies.	Amount Assured.	Annual Premiums Payable.	Number of Policies.	Amount Assured.	Annual Premiums Payable.
		£	£		£	£
1916	16,372	4,100,923	166,301	50,649	1,516,518	102,668
1917	18,010	4,914,896	192,308	53,491	1,720,790	115,738
1918	21,643	5,972,028	252,052	62,279	2,138,259	145,630
1919	21,543	6,483,990	236,541	64,199	2,437,850	160,699
1920	28,837	7,973,324	281,379	70,305	2,986,482	187,560

#### AUSTRALASIAN SOCIETIES.—GENERAL TRANSACTIONS.

The receipts of the societies are represented chiefly by the collections from premiums on policies, and by interest arising from investments. Payments on account of death claims, policies matured and surrendered, cash bonuses, and expenses of management, constitute the bulk of the disbursements, the excess of receipts over expenditure representing the additions to the funds.

*Total Business.*

Details of the total business—ordinary and industrial—of the Australasian societies are shown in the following table:—

Year.	Societies.	Policies in Force.	Receipts.	Expenditure.	Accumulated Funds, including Paid-up Capital.		Interest.	
					Additions during the Year.	Total Amount at end of Year.	Amount Received.	Average Rate Realised on Mean Funds.
	No.	No.	£ 000	£ 000	£ 000	£ 000	£ 000	per cent.
1895	10	268,242	3,392	2,334	1,058	20,438	1,037	5·21
1900	11	331,868	4,093	2,648	1,445	26,491	1,162	4·51
1905	14	756,585	5,437	3,834	1,603	34,916	1,528	4·48
1910	11	1,056,173	7,131	4,619	2,512	46,196	1,963	4·46
1915	14	1,424,196	9,474	6,084	3,390	62,214	2,763	4·56
1920	14	1,944,845	14,080	7,944	6,136	83,016	4,116	5·15

The annual additions to the funds have shown a considerable increase since 1910, and there has been a gradual increase in earning power since that year, when 4·46 per cent. was realised, but the most recent rate (5·15 per cent.) is only slightly lower than that of 1895, which was the highest return during the period under review. A comparison with the bank rate of interest on fixed deposits, given on page 293, shows that diminished rates were general until a slight increase took place between the years 1910 and 1915, which continued during following years, and the interest earned by the insurance companies has held a correlation to the general tendency.

*Receipts and Expenditure.*

The following table shows the aggregate receipts and disbursements of the Australasian institutions during 1920 for both classes of business:—

Particulars.	Ordinary Branch.	Industrial Branch.	Total.
<b>Receipts—</b>			
Premiums—	£	£	£
New ... ..	1,186,943	8,479	1,195,422
Renewal ... ..	6,677,819	1,944,262	8,622,081
Consideration for Annuities...	53,311	...	53,311
Interest ... ..	3,709,612	312,956	4,022,568
Other (Rents, &c.) ... ..	165,218	20,702	185,920
<b>Total Receipts</b> ... ..	<b>11,792,903</b>	<b>2,286,399</b>	<b>14,079,302</b>
<b>Expenditure—</b>			
Claims ... ..	3,949,136	384,642	4,333,778
Surrenders ... ..	691,138	29,675	720,813
Annuities ... ..	115,547	295	115,842
Cash Bonuses and Dividends ... ..	251,596	65,921	317,517
Expenses ... ..	1,472,271	749,947	2,222,218
Amount written off to Depreciation, Reserves, Transfers, &c. ... ..	171,622	61,980	233,602
<b>Total Expenditure</b> ... ..	<b>6,651,310</b>	<b>1,292,460</b>	<b>7,943,770</b>

*Expenses of Management.*

The expenses of management of the ordinary business in 1920 represented in the aggregate 12·5 per cent. of the total receipts, and 18·6 per cent. of the premium income, and of the industrial branch, 32·8 and 38·4 per cent. respectively. The ratio between management expenses and premium income must necessarily vary with the volume of new business transacted, and the age of the society, quite apart from the competition for new business. The following figures show the cost of management, including commission and taxes, and the proportion of premium income and gross receipts, ordinary and industrial departments being included.

Year.	Management Expenses.	Premium Income.	Gross Receipts.	Management Expenses.	
				Per cent. of—	
				Premium Income.	Gross Receipts.
	£	£	£		
1895	438,524	2,380,167	3,392,423	18·42	12·93
1900	565,380	2,799,512	4,093,376	20·19	13·81
1905	858,741	3,500,448	5,437,589	24·53	15·79
1910	1,016,153	5,074,204	7,131,250	20·03	14·25
1915	1,252,433	6,591,572	9,474,126	19·00	13·22
1920	2,222,218	9,870,814	14,079,302	22·51	15·78

The management expenses of the ordinary and industrial branches have been stated separately for the six years 1915 to 1920, and the proportions are shown in the following table.

Year.	Ordinary Branch.		Industrial Branch.	
	Proportion of Management Expenses to—			
	Premium Income.	Total Receipts.	Premium Income.	Total Receipts.
	per cent.	per cent.	per cent.	per cent.
1915	15·39	10·32	38·86	34·12
1916	15·45	10·28	38·82	33·82
1917	16·34	10·86	38·23	33·21
1918	16·65	11·05	38·06	32·80
1919	18·06	11·91	38·33	32·90
1920	18·60	12·48	38·40	32·80

In 1920 the lowest proportion of management expenses to premium receipts in the ordinary branch shown by any company was 14·9 per cent. and the highest was 57·9 per cent.; in relation to the total receipts, the highest and lowest proportions were 53·60 per cent. and 9·30 per cent. respectively.

The expenses of the industrial branch are necessarily very high in proportion to the receipts, on account of the house-to-house method of collection, which is an essential feature of the system. The proportion of management expenses to premium receipts ranged from 34·1 per cent. to 85·3 per cent. and to the total receipts from 28·7 per cent. to 80·5 per cent.

*Liabilities and Assets.*

The following table gives a summary of the liabilities and assets of the Australasian societies for the year 1920 :—

Liabilities.		Assets.	
<b>Assurance Funds—</b>	<b>£</b>	<b>Loans—</b>	<b>£</b>
Participating in Profits ...	78,477,953	On Mortgage ...	19,370,536
Not participating in Profits ...	935,183	„ Municipal and Other	
Claims Investment Fund ...	36,064	Local Rates ...	10,663,388
Other Assurance Funds ...	2,472,984	„ Reversionary, Life, and	
		Other Interests ...	633,932
<b>Total ...</b>	<b>81,922,184</b>	„ Policies ...	8,427,070
		„ Personal Security ...	13,144
<b>Guarantee and Contingency</b>		„ Government Securities..	366,538
Funds ...	31,669	„ Other Debentures and	
Investment Fluctuation Fund ...	238,598	Bonds ...	639,937
Claims admitted but not paid ...	1,075,681	„ Miscellaneous Loans ...	13,272
Outstanding Accounts... ..	150,637	<b>Total ...</b>	<b>40,127,817</b>
<b>Other Liabilities—</b>			
Paid-up Capital ...	626,102	Government Securities ...	42,461,851
Reserve Funds ...	210,255	Real Estate ...	3,474,143
Miscellaneous—including		Other Assets ...	3,957,144
Deposits ...	5,765,829		
<b>Total Liabilities...</b>	<b>£90,020,955</b>	<b>Total Assets ...</b>	<b>£90,020,955</b>

Loans on mortgage, municipal securities, policies of members, &c., represent 45 per cent. of the total assets. In former years insurance companies sought only these forms of investment, but recently attention has been given to Government securities and investments in shares, and in 1920 the proportion of these investments was 47 per cent. of the total assets. Considerable sums are also deposited with banks, or invested in freehold and leasehold property, and since 1915 large sums have been subscribed to the various War Loans. Investments on personal security are unusual, and are generally combined with life policies, the total amount under this heading in the year 1920 being only £13,144. In some of the States companies are obliged by law to deposit certain sums with the Treasury as a guarantee of good faith, and these amounts are included in their balance-sheets under the head of Government securities or of deposits. The ratio of loans on mortgages, policies, &c., to total assets for the years quoted was as follows :—

Year.	per cent.	Year.	per cent.
1895...	72.57	1910...	65.94
1900...	69.21	1915...	72.06
1905...	61.54	1920...	44.58

The aggregate liabilities and assets of the Australasian societies for the period 1895 to 1920 are shown in the following table:—

Year.	Societies.	Liabilities.			Assets.		
		Paid-up Capital and Accumulated Funds.	Other Liabilities.	Total.	Loans on Mortgages, Policies, etc.	Securities, Freehold Property, etc.	Total.
	No.	£	£	£	£	£	£
1895	10	21,497,059	...	21,497,059	15,600,229	5,896,830	21,497,059
1900	11	27,471,223	...	27,471,223	19,013,579	8,457,644	27,471,223
1905	11	35,867,362	...	35,867,362	22,072,061	13,795,301	35,867,362
1910	11	45,668,204	775,785	46,443,989	30,625,778	15,818,211	46,443,989
1915	14	61,259,104	1,932,233	63,191,337	45,535,992	17,655,345	63,191,337
1920	14	83,028,808	6,992,147	90,020,955	40,127,817	49,893,138	90,020,955

#### *Surrender of Policies.*

All societies transacting business in New South Wales allow policy-holders a consideration on surrendering unmaturing policies, provided a certain time has elapsed since issue, or a certain number of premiums has been paid. Three companies allow surrender values after the policy has been in force for a period of two years, but with other companies the period must be longer. For a whole-life assurance of £100, excluding bonus additions, the refund allowed after two annual premiums have been paid ranges from 12s. 1d. to £1 8s., when the age at entry is 25; 17s. 1d. to £1 18s. 10d. when the age at entry is 35; and £1 5s. 8d. to £2 17s. 1d. when the age at entry is 45. After five annual payments the surrender values for similar ages of entry are respectively £1 17s. 1d. to £5 4s. 4d.; £2 11s. 1d. to £6 11s. 5d.; and £3 13s. 1d. to £9 4s. 5d. For endowment assurance payable at age 60 or previous death, after two annual premiums have been paid, the surrender values range from £1 9s. 8d. to £1 15s. 2d. when the age of entry is 20, and after five annual premiums have been paid £2 6s. 9d. to £5 11s. 2d. When the age of entry is 30 the values range from £1 9s. to £2 17s. after two years' duration, and £3 16s. 5d. to £9 6s. 7d. after five years.

#### *Annual Premiums.*

The annual premiums payable for an assurance of £100 show some difference between companies. When the age at entry is 25, the annual premium for whole-life assurance varies from £1 17s. 7d. to £2 4s. 2d.; age 35, from £2 8s. 10d. to £2 17s. 6d.; and age 45 from £3 7s. 3d. to £3 19s. 1d. For endowment assurance payable at age 60 or previous death, when the age at entry is 20 years, the rates are £2 2s. 8d. to £2 11s. 2d.; age 30, £2 19s. 4d. to £3 9s. 2d.; and age 40, £4 14s. 5d. to £5 8s. 1d. Comparisons are affected, however, by the age of the institutions and the conditions relating to bonuses, and the rates quoted are irrespective of companies which have ceased to transact new business in New South Wales.

#### **FIRE, MARINE, AND GENERAL INSURANCE.**

The Fire Brigades Act, 1909, and its amendments, apply to 82 districts, but by proclamation the provisions may be extended to other areas. The equipment includes 33 permanent and 31 volunteer stations and brigades in

the metropolitan area (of which 5 permanent stations and brigades are within the boundaries of the City of Sydney), and 99 brigades in the country or extra-metropolitan divisions of New South Wales.

The Board of Fire Commissioners of New South Wales, representing the city and suburban area, the country area, the volunteer brigades, and the insurance companies, with a president appointed by the Government, exercises control in regard to fire prevention in declared districts, and may recover charges for attendance at fires outside such districts. The Board is charged with the establishment and maintenance of permanent fire brigades, and the authorisation and subsidising of volunteer bodies. Funds are raised by contributions of one-third individually of the estimated requirements for each district, by insurance companies, by municipalities, and by the Government; and a *pro rata* contribution is charged against each owner of property assured in any company which is not registered within the State. To ensure efficient operation of these provisions, periodical returns are required by the Board from municipalities, insurance companies, and property owners.

The following table shows the revenue account and balance-sheet of the Board of Fire Commissioners for the year ended the 31st December, 1920 :—

Revenue.				Expenditure.			
£				£			
Balance from 1919 ...	...	...	34	Administration ...	...	...	7,437
Subsidy from Government ...	64,416			Salaries, and Payments to			
Subsidy from Municipalities and				Volunteers ...	...	...	120,134
Shires ...	64,416			Repairs to Buildings, Plant, and			
Subsidy from Fire Insurance Com-				other expenses... ..	...	...	47,883
panies and Firms ...	64,416			Equipment and Property Charges			18,435
Other Sources ...	4,291			Balance ...	...	...	3,684
Total ...	£197,573			Total ...	...	...	£197,573

Liabilities.				Assets.			
£				£			
Fund Account ...	52,433			Land and Buildings ...	...	...	156,882
Reserves, and Trust Accounts ...	1,801			Plant Account and Fire Appliances			94,885
Debentures and Accrued Interest	101,500			Stocks on Hand ...	...	...	22,668
Revenue and Expenditure Account	3,684			Petty Cash Account ...	...	...	154
Property and Equipment Fund ...	109,432			Administration Account ...	...	...	262
Commercial Banking Co. of Syd-				Other—Trust Funds, &c....	...	...	555
ney ...	6,556						
Total... ..	£275,406			Total ...	...	...	£275,406

The estimates of revenue adopted by the Board for 1921 amounted to £220,935, being £163,551 for the Sydney District, and £57,384 for the Country Districts. In Sydney, suburbs, and shires included in the Sydney Fire District, the ratio of municipal contributions according to the assessed annual value, was 7s. 9d per £100 in 1921; during the previous five years the ratio varied between 6s. 1d. (in 1917) and 7s. 6d. (in 1920).

Under the Act, the contributions payable by insurance companies are proportionate to the premiums received by or due to the companies during the year. In 1920 contributions amounting to £63,822 were received from

95 insurance companies, and in addition contributions amounting to £594 were received from 65 individual firms who insured goods with companies not registered in New South Wales. The contributions to the Sydney Fire District in 1920 represented £6 4s. 1d. per £100 of premium, and in the remaining districts the percentage ranged from £1 14s. 2d. to £16 16s.

There were 86 companies transacting fire, marine, and general insurance (as distinct from life assurance) business in New South Wales during 1921, but some of the life companies transacted accident and workmen's compensation insurance. The aggregate liabilities amounted to £322,872,610, of which £28,173,593 represented paid-up capital; £34,013,045 reserve funds; £27,884,580 reserve for unearned premiums; £156,859,906 insurance and other funds; and £75,941,486 outstanding losses and other liabilities. The assets comprised the following items:—Mortgages and other loans, £18,319,251; Government securities and other investments, £209,391,480; land and house property, £19,896,489; cash on deposit, current account, and in hand, £23,792,726; and other assets, £51,472,664.

The nature of the local insurances effected during the year ended 30th June, 1921, is shown in the following table:—

Nature of Insurance.	Revenue in New South Wales.	Expenditure in New South Wales.						Proportion of Premium Income.		
		Losses, less Re-insurances.	Expenses of Management.		Total.			Proportion of Premium Income.		
	Premiums less Re-insurances and Returns.		Com-mission and Agents' Charges	Other.				Losses.	Com-mission and Agents' Charges	Other Management Expenses.
	£	£	£	£	£	percent.	percent.	percent.		
Fire .. .. .	1,876,755	993,280	274,796	448,118	1,721,194	53.19	14.64	23.88		
Marine .. .. .	630,910	296,123	45,494	127,662	409,279	46.94	7.21	20.23		
Accident .. .. .	116,813	47,354	26,791	20,662	94,807	40.54	22.93	17.69		
Employers' Liability and Workman's Compensation ..	343,289	179,027	36,805	78,381	294,813	51.57	10.57	22.60		
Public Risk, Third Party ..	24,046	8,596	3,037	6,054	17,689	35.75	12.63	25.19		
Plate-glass .. .. .	41,007	20,558	6,750	9,973	37,281	50.13	16.46	24.32		
Motor Car and Motor Cycle ..	127,427	70,312	16,872	28,796	115,980	55.18	13.24	22.60		
Hailstone .. .. .	273,658	75,487	45,237	45,152	165,926	27.03	16.25	16.20		
Boiler Explosion .. .. .	6,558	2,124	629	3,839	6,592	32.39	9.59	58.54		
Live Stock .. .. .	25,867	9,471	4,127	6,958	20,556	36.61	15.95	26.90		
Burglary .. .. .	23,475	20,401	4,084	6,416	30,901	71.65	14.34	22.53		
Guarantee .. .. .	12,402	4,205	1,331	2,634	8,170	33.91	10.73	21.24		
Loss of Profits .. .. .	45,730	20,768	4,912	10,243	35,923	45.41	10.74	22.40		
Elevator .. .. .	487	10	110	70	190	2.05	22.59	14.37		
Sprinkler .. .. .	1,029	..	103	167	270	..	10.01	16.23		
Other .. .. .	1,536	99	59	243	401	6.45	3.84	15.82		
Total Premiums .. .. .	3,565,989	..	..	..	..	..	..	..		
Total Interest, &c. .. ..	108,018	..	..	..	..	..	..	..		
Total .. .. .	3,674,007	1,738,415	471,187	795,370	3,019,972	49.17	13.21	22.30		

The particulars quoted in the above table relate to New South Wales risks; that is, to all business written by the companies represented in their New South Wales books. Premiums exclude re-insurances and returns; and treaty arrangements are not taken into consideration. In the case of losses, amounts recovered from Australasian re-insuring offices are also excluded, and with regard to fire insurance, a reserve for unexpired risks should be taken into account, the amount set aside being usually 40 per cent. of the net premiums.

The total premiums amounted to £3,565,989, and the losses to £1,753,415, the latter being 49·17 per cent. of the premiums. The expenses for commission and agents' charges were £471,187, and for general management £795,370, making a total of £1,266,557, or 35·51 per cent. of the premium income, and 34·47 of the gross revenue.

According to the local statements, fire business comprises more than half of the total general insurances. The premiums received for fire risks during 1920-21 were £1,876,755, and the losses amounted to £998,280, or 53·19 per cent.

Of all classes of general insurance, the highest proportionate loss was sustained by companies which undertook to furnish indemnities in the event of loss by burglary, motor car and motor cycle insurance, loss by fire, employers' liabilities in compensating injured workmen, plate glass, marine, and loss of profits, in the order named.

The succeeding table shows the total revenue and expenditure during the last five years, the transactions of the fire branch being shown separately. The interest receipts could not be distributed under the various headings, and have been included in one item.

Year ended 30th June.	Revenue.			Expenditure.			
	Premiums.	Interest.	Total Revenue.	Losses.	Management.		Total Expendi- ture.
					Commis- sion and Agents' Charges.	Other Manage- ment Ex- penses.	
	£	£	£	£	£	£	£
1917 { Fire ...	1,043,871			588,194	132,309	301,877	1,022,380
1917 { Other ...	718,297			516,060	76,100	168,857	761,017
1917 { Total ...	1,762,168	53,616	1,815,784	1,104,254	208,409	470,734	1,783,397
1918 { Fire ...	1,117,849			415,707	153,373	314,918	883,998
1918 { Other ...	917,328			353,108	94,128	225,524	672,760
1918 { Total ...	2,035,177	65,148	2,100,325	768,815	247,501	540,442	1,556,758
1919 { Fire ...	1,227,914			533,394	165,812	377,065	1,076,271
1919 { Other ...	937,828			353,733	96,435	237,492	687,660
1919 { Total ...	2,165,742	72,590	2,238,332	887,127	262,247	614,557	1,763,931
1920 { Fire ...	1,380,079			735,834	177,173	416,280	1,329,287
1920 { Other ...	1,085,293			493,828	109,111	269,671	872,610
1920 { Total ...	2,465,372	83,296	2,548,668	1,229,662	286,284	685,951	2,201,897
1921 { Fire ...	1,876,755			998,280	274,796	448,118	1,721,194
1921 { Other ...	1,689,234			755,135	196,391	347,252	1,298,778
1921 { Total ...	3,565,989	108,013	3,674,007	1,753,415	471,187	795,370	3,019,972



The next statement shows the proportion of expenditure to premium income for the same years.

Year ended 30th June.		Losses.	Management.		Total Expenditure.
			Commission and Agents' Charges.	Other Management Expenses.	
		per cent.	per cent.	per cent.	per cent.
1917	{ Fire ...	56.35	12.67	28.93	97.95
	{ Other ...	71.84	10.60	23.51	105.95
	{ Total ...	62.66	11.83	26.71	101.20
1918	{ Fire ...	37.19	13.72	28.17	79.08
	{ Other ...	38.49	10.26	24.58	73.33
	{ Total ...	37.77	12.16	26.55	76.48
1919	{ Fire ...	43.44	13.50	30.71	87.65
	{ Other ...	37.72	10.28	25.32	73.32
	{ Total ...	40.96	12.19	28.38	81.53
1920	{ Fire ...	53.32	12.84	30.16	96.32
	{ Other ...	45.50	10.06	24.84	80.40
	{ Total ...	49.88	11.61	27.82	89.31
1921	{ Fire ...	53.19	14.64	23.88	91.71
	{ Other ...	44.70	11.63	20.56	76.89
	{ Total ...	49.17	13.21	22.30	84.68

### BANKRUPTCY.

The following statement shows the number of bankruptcy petitions in each of the last five years:—

Year.	Petitions in Bankruptcy.			Petitions With- drawn, Refused, etc.	Sequestrations.			
	Voluntary.	Com- pulsory.	Total.		Orders Granted.	Liabilities.	Assets.	Ratio of Assets per £ of Liabilities.
								s. d.
1916	248	145	393	43	350	383,448	303,893	15 10
1917	178	123	301	34	267	227,663	208,093	18 3
1918	184	113	297	33	264	221,928	115,776	10 5
1919	193	123	316	34	282	323,222	189,920	11 9
1920	210	134	344	55	289	204,594	133,550	13 8

The estates freed from sequestration during the last five years numbered 499, being only 34 per cent. of the orders granted. Occasionally applications for certificates are refused, and, taking these into consideration, it would appear that during the period referred to out of 100 bankrupts 66 were unable, or too indifferent, to take the necessary steps to free themselves from bankruptcy.

The property of an uncertificated bankrupt, even if acquired subsequently to sequestration, is liable to seizure on behalf of unsatisfied creditors.

During 1920 the liabilities, according to the bankrupts' schedules, amounted to £204,594, and the assets to £139,550. The qualification "according to the bankrupt's schedules" is necessary, as the assets and liabilities established after investigation by the Court differ widely from those furnished.

#### TRANSACTIONS IN REAL ESTATE.

The Real Property Act, commonly known as the "Torrens" Act, was passed in 1862 to regulate the procedure in regard to land transfers. This Act and its amendments were consolidated in 1900, and its main features are the transfer of real property by registration of title instead of by deeds, the absolute indefeasibility of the title when registered, and the protection afforded to owners against possessory claims—as the title issued under the Act stands good, notwithstanding any length of adverse possession. All lands sold by the Crown since the passing of the Act have been conveyed to purchasers under its provisions, transactions under the old law being restricted to grants issued prior to 1862, and governed by the Deeds Registration Act. The area for which such grants were issued amounted to 7,478,794 acres; 2,429,437 acres have since been brought under the provisions of the "Torrens" Act, hence 5,049,347 acres still remain under the old tenure. Lands may be placed under the Real Property or the "Torrens" Act only when the titles are unexceptional.

The area of conveyed Crown lands and of private estates brought under the "Torrens" Act during the five years ended 1920 was as follows:—

Year.	Area.			Value.		
	Crown Lands.	Private Lands.	Total.	Crown Lands.	Private Lands.	Total.
	acres.	acres.	acres.	£	£	£
1916	423,303	23,352	446,655	393,749	674,678	1,068,427
1917	400,978	21,878	422,856	371,549	855,073	1,226,622
1918	388,672	26,628	415,300	371,330	1,229,323	1,600,653
1919	568,750	32,358	601,108	563,670	1,878,792	2,442,462
1920	1,022,601	30,060	1,052,661	981,996	1,800,904	2,782,900

For the whole period during which the "Torrens" system has been in operation, 38,304,267 acres, valued at £37,927,689, have been conveyed under its provisions; and 2,429,437 acres, valued at £46,888,848, have been brought under it, the deeds under the old Act thus being automatically cancelled.

The following table shows for each year of the past decade the amount paid as money consideration on sales of private lands, estates sold on long terms being excluded.

Year.	Conveyances or Transfers.			Year.	Conveyances or Transfers.		
	Under Deeds Registration Act.	Under Real Property (Torrens) Act.	Total.		Under Deeds Registration Act.	Under Real Property (Torrens) Act.	Total.
	£000	£000	£000		£000	£000	£000
1911	4,602	16,426	21,028	1916	3,370	12,189	15,559
1912	5,502	18,380	23,882	1917	3,979	11,619	15,598
1913	4,726	16,079	20,805	1918	3,995	16,835	20,830
1914	3,613	16,585	20,198	1919	4,859	21,070	25,929
1915	3,153	11,850	15,003	1920	9,705	45,271	54,976

As already mentioned, the Real Property Act provides that on the issue of a certificate the title of the person named on the certificate is indefeasible. Provision is made, however, for error in transfer, by which persons might be deprived of their property: as, should the transfer be made to the wrong person, the holder of the certificate cannot be dispossessed of his property unless he has acted fraudulently. To enable the Government to compensate persons who, through error, may have been deprived of their properties, an assurance fund was created by means of a contribution of one halfpenny in the pound on the declared capital value of property when first brought under the Act, and upon transmission of titles of estates of deceased proprietors.

It is a sterling testimony of the value of the Act, and of the facility and accuracy of its working, that payments from the assurance fund to the 31st December, 1907, in respect of titles improperly granted, amounted only to £16,326. In 1907 this fund, as a separate account, was closed, and the amount at credit, £255,959, was transferred to the Closer Settlement Account, in accordance with the provisions of section 6 of the Public Works and Closer Settlement Funds Act, 1906, and all assurance contributions under section 191 of the Real Property Act, 1900, and all claims for compensation, are now dealt with under the Closer Settlement Act.

The estimated unimproved capital value of land in the State in the year 1920 was £239,858,000, and the improved value was £569,529,000. The total area alienated (exclusive of Federal Capital transactions) amounted on the 30th June, 1920, to 43,749,505 acres, of which, as already stated, 40,733,704 acres are held under the Real Property or "Torrens" Act. The total alienated area is subject to all the operations of lien and mortgage, to State municipal rating, and to State and Federal taxation.

#### MORTGAGES.

Mortgages, except those regulated by the Bills of Sale Acts and the Merchant Shipping Act, may be registered at the Registrar-General's office, but there are a large number of unregistered mortgages of which no record is obtainable.

In the case of the registered mortgages, the amount of consideration for which a mortgage stands as security is not always stated in the deeds, the words "valuable consideration" or "cash credit" being inserted in cases where the advances are liable to fluctuation; and, as this frequently occurs when the property mortgaged is of great value, an exact statement of the total advances against mortgages cannot be made.

Mortgages of land are registered under the Deeds Registration Act or the Real Property Act, according to the title of the property at the date of mortgage. The consideration given generally represents the principal owing: in some cases, however, it stands for the limit within which clients of banks and of other loan institutions are entitled to draw.

Liens on wool, mortgages on live stock, and liens on growing crops are registered under special Acts. Mortgages on live stock are current till discharge, and liens on wool mature at the end of each season, terminating without formal discharge. The duration of liens on agricultural and horticultural produce may not exceed one year. Such advances do not usually reach large sums, as there is an element of uncertainty in the security offered.

Particulars regarding the registered mortgages of land, liens on crops and on wool, and mortgages of live stock, during the last five years are shown below, and the figures relate only to cases in which a specific amount is

stated in the deeds, whether that amount was the sum actually advanced or not:—

Year.	Mortgages of Land.		Mortgages of Crops, Wool, and Live Stock.			
	Number.	Consideration.	Number.			Consideration.
			Crops.	Wool.	Live Stock.	
		£				£
1916	21,019	17,075,878	2,492	774	2,689	1,668,613
1917	19,011	15,729,185	1,641	809	2,419	3,019,962
1918	22,625	16,401,662	1,496	1,023	3,017	1,764,928
1919	28,282	20,565,802	3,488	1,324	2,840	2,542,135
1920	33,016	35,423,499	4,620	1,198	2,855	3,055,843

The figures in the last column represent the net amount of advances after allowing for loans negotiated both on wool and live stock.

#### *Mortgages on Ships.*

Mortgages of registered British vessels are arranged under the Imperial Merchant Shipping Act of 1894. Transactions of this nature are divided into two classes, one in which the vessel is the sole security, and the other in which the advances are made on the security of the "account current," which may consist of ships, wharfage appliances, land, and other properties. The deed of mortgage is generally executed for the full amount of the advance. Registrations are effected at the two ports of registry, Sydney and Newcastle, and the combined returns are given in the following statement.

Year ended 30th June.	Mortgage on Ships only.				Mortgage on Account Current.			
	Sailing Vessels.		Steam and Motor Vessels.		Sailing Vessels.		Steam and Motor Vessels.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		£		£		£		£
1917	2	1,600	4	15,300	...	...	2	1,001
1918	1	200	10	187,762	...	...	16	14,012
1919	1	500	3	5,535	...	...	4	25,500
1920	1	175	10	34,240	...	...	2	1
1921	...	.....	11	23,490	...	...	4	4

#### *Bills of Sale.*

Mortgages on personalty other than ships and shipping appliances, wool, live stock, and growing crops, are filed at the Supreme Court. A bill of sale is ineffective as to certain household furniture unless the consent of the wife or the husband of the maker or the giver of the bill is endorsed thereon. The law requires that each document must be filed within thirty days after it is made or given, otherwise the transaction is void as against execution creditors and against the official assignee or the trustee of a bankrupt estate; also that the registration must be renewed every twelve

months, and to prevent fraud and imposition the records are open to the inspection of the public. The total amount of advances made annually on the bills of sale is not readily available, but according to the number of bills filed the sum must be considerable. A complete record is not made of bills terminated voluntarily, or by seizure, the official records showing only those discharged in the ordinary way. There are frequent seizures of the security given, which consists generally of household furniture and stock-in-trade, and it is regrettable that no record is kept of them; but neglect of registration of foreclosures is a weakness in procedure under all Acts regulating mortgage transactions. The bills filed and the discharges registered during the five years ended 1920 were as follow :—

Year.	Registrations.		Renewals Under Bills of Sale Act of 1898.
	Filed in Supreme Court.	Satisfied, or Orders for Discharge Made.	
1916	2,511	365	2,478
1917	2,513	275	2,506
1918	3,056	353	2,414
1919	3,525	430	2,476
1920	4,065	502	2,411

#### REGISTRATION OF MONEY-LENDERS.

Under the Money-lenders and Infants Loans Act, 1905, money-lenders must be registered at the Registrar-General's Office, and they must conduct their business only under their own or their firm names, and at their registered offices. The term "money-lender" includes every person or company transacting the business of money-lending, but it excludes licensed pawn-brokers, registered friendly societies, institutions incorporated by special Act of Parliament to lend money, and banking and insurance companies. The number of registrations and renewals during the year 1920 was 64.

#### ESTATES OF DECEASED PERSONS.

The following table shows the number of estates and the amount on which probate duty was paid during the ten years ended the 30th June, 1921, including estates administered by the Public Trustee.

Year ended 30th June.	Estates.	Amount.	Year ended 30th June.	Estates.	Amount.
	No.	£		No.	£
1912	4,372	13,445,639	1917	5,310	11,554,726
1913	4,749	8,509,070	1918	6,476	11,859,375
1914	4,631	10,439,256	1919	6,873	11,818,222
1915	4,438	9,997,615	1920	7,172	17,106,876
1916	5,107	10,783,406	1921	5,731	12,199,419

According to the foregoing figures, probate duty was paid during the ten years quoted on 54,859 estates, valued at £117,713,604, representing an average value per estate of £2,146.

For the year ended 30th June, 1921, additional details were compiled, relating to the estates of males and females separately, with the result shown below :—

	Estates.		Proportion to Total.	
	Number.	Value.	Number.	Value.
		£	per cent.	per cent.
Males ... ..	3,924	9,265,438	68·47	75·95
Females ... ..	1,807	2,933,981	31·53	24·05
Total ... ..	5,731	12,199,419	100	100

The following table affords a comparison of the proportion of persons dying possessed of property, per hundred of the total deaths in each quinquennium since the year 1880. The figures shown in this, and succeeding tables, are exclusive of properties administered by the Curator of Intestate Estates for the years prior to 1911 :—

Period.	Proportion of Deceased Persons with Estates per 100 Deaths.	Period.	Proportion of Deceased Persons with Estates per 100 Deaths.
1880-84	11·0	1915	22·7
1885-89	11·6	1916	25·4
1890-94	13·2	1917	32·2
1895-99	14·9	1918	37·5
1900-04	17·0	*1919	30·8
1905-09	19·1	†1920	27·6
1910-14	22·9		

\* Year ended June, 1920. † Year ended June, 1921.

The preceding figures indicate a wide diffusion of prosperity, but a more convincing illustration of the extensive distribution of property in the State is afforded by the next table, which shows the proportion of estates per 100 deaths of adult males, and per 100 deaths of adult males and females. The latter method of comparison is frequently neglected, but it is worthy of consideration, as large numbers of women are possessors of valuable property in their own right.

Period.	Ratio of Estates per 100 Deaths of Adult Males.	Ratio of Estates per 100 Deaths of Adult Males and Females.	Period.	Ratio of Estates per 100 Deaths of Adult Males.	Ratio of Estates per 100 Deaths of Adult Males and Females.
1880-84	34·6	22·3	1915	56·1	33·6
1885-89	37·5	23·8	1916	62·5	37·2
1890-94	41·2	25·8	1917	76·0	44·8
1895-99	42·7	26·2	1918	88·1	51·8
1900-04	46·0	27·8	*1919	78·0	41·9
1905-09	48·8	29·2	†1920	70·4	40·8
1910-14	56·6	34·0			

\* Year ended June, 1920. † Year ended June, 1921

The proportions shown in the preceding tables were increased considerably during the years 1917 and 1918 by reason of the fact that the figures relating to the estates include a large number—about 1,500 in 1917 and nearly 2,500 in 1918—left by members of the naval and military forces, and as the majority of these deaths occurred abroad they were not included in the number of deaths. During the year ended June, 1921, there was a decrease in the proportions as compared with the previous year, but the figures were much higher than before the war.

The statement must be taken relatively, and the following table, which shows the number of persons dying in possession of estates under various categories, affords a basis for testing the extent of its application.

Category.	Number of Deceased Persons leaving Property.	Value of Estates of Deceased Persons.	Proportion in each Group.	
			Number.	Value.
		£	per cent.	per cent.
Under £1,000 ... ..	40,195	11,645,757	73.27	9.89
£1,000 to £5,000 ... ..	10,625	24,033,867	19.37	20.42
£5,000 to £12,500 ... ..	2,531	19,309,052	4.61	16.40
£12,500 to £25,000 ... ..	859	14,936,916	1.56	12.69
£25,000 to £50,000 ... ..	404	13,608,796	0.74	11.56
£50,000 and over ... ..	245	34,179,216	0.45	29.04
Total ... ..	54,859	117,713,604	100	100

It will thus be seen that, of the persons who died during the last ten years possessing property passed for probate,  $\frac{1}{4}$  per cent. possessed 29 per cent. of the value, and on the other hand, 73 per cent. of the persons who died possessed 10 per cent. of the value of the property.

#### INCOMES.

Estimates of the total amount of income earned by residents of New South Wales were formulated from the results of the censuses taken in 1891 and 1901, and were as follows:—1892, £63,350,000; 1902, £63,927,000, or £54 and £46 respectively per head of population.

Until 1911 certain details of the incomes assessed for purposes of the State Income Tax were published annually, but these are not now made available for publication.

Complete particulars concerning the aggregate incomes of the people of New South Wales are, however, obtainable for the year 1915, when the War Census was taken under authority of the Federal Government. The results of that census were partially recorded in the Year Book for 1918, and it was there shown that at 30th June, 1915, 792,556 persons in this State were receiving an aggregate annual income of £94,538,137; of whom 153,499 possessed incomes exceeding £156, amounting in all to £50,339,531. A comparison on the same basis is not available for more recent years, but it is interesting to note that in the year 1918-19 the number of incomes

of residents of New South Wales assessed for Federal Income Tax was 149,658, the total gross income being £83,917,626. Though the term "gross income" includes a number of minor items which are duplicated, this result affords evidence of a very great expansion in the earnings of the people of the State.

The following table has been compiled from the Seventh Annual Report of the Federal Commissioner of Taxation, and relates to the incomes of tax-payers resident in New South Wales, excluding companies, but including the dividends paid to shareholders. Certain returns are sent to the Central Office from all States of the Commonwealth, but it is not possible to make an exact allocation of these incomes and it has been assumed that a ratio equivalent to the State's proportion of the population of the Commonwealth (38·6 per cent.) may fairly be credited to New South Wales.

Grade of Taxable Income.	Total Tax-payers in each Grade.	Number of Taxpayers who derived income principally in capacity of—				Gross Income from—			Taxable Income.	Net Tax.
		Wage Earner.	Primary Producer.	Other Pursuits.	Property Owner.	Personal Exertion.	Property.	Total.		
£						£	£	£	£	£
0- 100 ...	79,355	62,717	5,111	6,277	5,250	17,454,541	1,772,361	19,226,902	2,873,539	90,392
101- 300 ...	41,942	25,976	5,340	5,870	4,763	15,043,096	2,530,480	17,573,576	7,123,785	183,620
301- 500 ...	11,387	4,596	2,303	2,542	1,946	7,129,552	1,490,201	8,619,753	4,380,669	118,701
501- 1,000 ...	10,380	2,826	2,513	2,881	2,160	10,157,506	2,518,173	12,675,679	7,260,988	306,438
1,001- 2,000 ...	4,269	755	1,068	1,367	1,079	7,326,914	2,262,721	9,589,635	5,840,009	401,775
2,001- 5,000 ...	1,825	176	425	579	645	6,201,305	2,513,803	8,715,108	5,398,188	703,662
5,001- 10,000 ...	354	19	108	103	124	2,387,226	1,045,940	3,433,166	2,383,339	552,452
10,001-100,000 ...	136	...	52	46	38	2,902,622	800,232	3,702,854	2,018,573	775,929
Over 100,000 ...	3	...	...	...	3	5,769	375,184	380,953	358,769	132,757
Total ...	149,658	97,065	16,920	19,665	16,008	68,608,531	15,309,095	83,917,626	37,637,859	3,265,726

The amount of taxable income in individual cases bears no fixed relationship to the amount of gross income, nor does the total gross income necessarily bear any fixed relationship to the total income of the community. The above particulars relate only to residents who paid tax on their incomes in the year 1918-19. Persons with dependents whose gross income did not exceed £156 per annum and others whose gross income did not exceed £100 per annum were not required to furnish returns. In addition to these two very large classes, numerous citizens were exempt from the tax by reason of the deduction of the amounts stated above from their gross incomes and other additional deductions such as the sum of £26 per annum for every dependent child under the age of 16 years; rates and taxes paid for State and Local Government purposes; calls paid to Australian mining companies; 5 per cent. of calls paid to other Australian companies; contributions to life assurance and kindred societies, and gifts exceeding £5 to public charitable institutions in Australia.

From the results of the Wealth Census it may be inferred by comparison that probably not more than one-sixth of the persons in receipt of income pay Federal Income Tax. Of the total number of taxpayers in 1918-19, 64·9 per cent. derived their income principally as wage-earners, 11·3 per cent. principally as primary producers, 13·1 per cent. principally from private enterprise and miscellaneous pursuits, and 10·7 per cent. principally as property owners. The number of persons deriving income from personal exertion only was 78,227, or 52·3 per cent., and their total gross income, £27,265,621; from property only, 11,561, or 7·7 per cent., and their total



income, £6,371,445; those deriving their incomes from both sources combined was 59,870, or 40·0 per cent., and their total incomes, £50,280,560. In all 81·8 per cent. of the total gross income was derived from personal exertion and 18·2 per cent. from property. The amount of taxable income represented 44·9 per cent. of the total gross income of persons taxed. The average amount of tax imposed was 9·34 pence in the pound of the gross income of taxable persons, and 20·87 pence in the pound of taxable income.

In addition to the resident persons paying tax it was estimated that there were 1,810 absentee taxpayers with a total gross income of £1,448,960, and a total taxable income of £1,238,552 paying £104,201 net tax. The number of companies in the State which sent taxable returns to the New South Wales office was 1,465 with a gross income of £34,057,596 (including £3,390,806 paid as dividends), and a taxable income of £3,912,596, paying in all £489,067 net tax. In addition a large proportion of the returns sent to Central Office originated in New South Wales, and if these could be allocated accurately, they would represent an addition of probably more than 50 per cent. to the amount of gross income of New South Wales companies as shown by the returns to the New South Wales office.

## MANUFACTURING INDUSTRY.

COMPARED with older countries, New South Wales cannot be considered an important manufacturing country; nevertheless, secondary industries are growing rapidly in importance. Nearly £60,000,000 have been invested in them, and they give employment to 145,000 persons. The industries carried on are principally domestic, and have grown up to supply local requirements, or to treat primary products. Many of the articles manufactured come into competition with imported articles, but of manufacture for export, in the ordinary meaning of the term, there is very little, except of food commodities, leather, and small quantities of boots and shoes, tobacco, rubber goods, metals and wool-tops.

Returns relating to the manufacturing industry are collected annually under the authority of the "Census Act, 1901," and must be furnished by every proprietor of a factory. The returns are used for statistical purposes only, and may not be produced in any court of law even under subpoena.

Prior to 1896 there was no uniformity in the method of collection in the various States, but in that year uniformity was secured with Victoria by agreement between the Statisticians. A standard classification of factories was adopted at a conference of statisticians in 1902, and the statistics for all the States have since been compiled on the same basis.

The following table is a summary of the important facts relating to the establishments in New South Wales which came within the definition of a factory and furnished returns in 1901, 1911, 1919-20, and 1920-21. The figures for the first two years relate to the calendar years, but the others are for the years ended 30th June.

Particulars.	1901.†	1911.	1919-20.	1920-21.
Number of Establishments ... ..	3,367	5,039	5,662	5,837
Number of Employees ... { Male ...	54,556	82,083	109,836	112,187
{ Female ...	11,674	26,541	34,618	32,824
{ Total ...	66,230	108,624	144,454	145,011
Salaries and Wages paid to Employees.† { Male £	*	8,917,583	19,128,348	22,766,216
{ Female £	*	1,130,079	2,552,848	2,852,375
{ Total £	4,952,000	10,047,662	21,681,196	25,618,591
Capital invested in Land, Buildings, and Fixtures ... ..	£ 7,838,628	13,140,207	24,108,890	28,428,917
Value of Plant and Machinery... ..	£ 5,880,725	12,510,600	26,366,083	31,115,444
Machinery—Average Horse-power in use ... ..	h.p. 44,265	127,547	187,514	208,463
Value of Materials and Fuel used ... ..	£ 15,637,611	34,913,564	83,899,163	94,713,249
Value added to Raw Materials in process of Manufacture ... ..	£ 10,100,860	19,432,447	39,314,317	43,128,137
Total Value of Output ... ..	£ 25,648,471	54,346,011	123,213,480	137,841,386

\* Information not available. † Excluding drawings of working proprietors

‡ Excluding a number of small establishments in country districts (see Year Book, 1907-8, page 448).

Particulars.	1901.†	1911.	1919-20.	1920-21.
<b>Average per Factory—</b>				
Employees ... .. No.	19·7	21·6	25·5	24·8
Horse-power of Machinery ... h.p.	13·2	25·3	33·1	35·7
Land and Buildings... .. £	2,328	2,607	4,263	4,870
Plant and Machinery... .. £	1,740	2,482	4,657	5,331
Material and Fuel ... .. £	4,644	6,928	14,818	16,226
Value added in process of Manufacture ... .. £	2,973	3,856	6,943	7,389
Total Output ... .. £	7,617	10,784	21,761	23,615
<b>Average per Employee—</b>				
Time Worked ... .. months	11·32	11·55	11·54	11·52
Salaries and Wages †... { Male £	*	114	181	211
{ Female £	*	43	74	88
{ Total £	81	96	155	182
Value of Materials and Fuel... £	236	321	581	653
Value added in Manufacture... £	151	179	272	298
Total Output ... .. £	387	500	853	951

\* Information not available.

† Excluding drawings of working proprietors.

‡ Excluding a number of small establishments in country districts (see Year Book, 1907-8, page 448).

The foregoing statement shows that the number of establishments has increased since 1901 by 73 per cent., and the number of employees by over 118 per cent. In 1901 the value of capital invested in land, buildings, fixtures, plant and machinery amounted to £13,699,353, and in 1920-21 it had increased to £59,544,361, or by over 334 per cent. The value of the output, which includes the production of butter and cheese factories, was considerably more than five times as great as in 1901; but this is due largely to the increase in the values of commodities during recent years. Side by side with this development the amount paid in wages increased by 417 per cent., and the expenditure on materials and fuel by 405 per cent.

The table provides a comparison over a period of twenty years, during which very great progress was made in the secondary industries of the State, and it is interesting to compare the first and second periods of ten years. Between 1901 (the year in which the Australian States were federated) and 1911 the number of establishments increased by about 1,600, compared with 798 between 1911 and 1921; the size of establishments, however, grew appreciably faster in the latter period than in the former. The average number of employees per factory was 25 per cent. greater in 1921 than 1901, the horse-power of machinery per factory 170 per cent. greater, and the value of output per employee was more than twice as great, although in regard to the last the great increase in prices must be considered. Between 1901 and 1911 the number of employees increased by 41,000, as against 36,000 between 1911 and 1921, and the average annual wages paid per employee

rose from £81 in 1901 to £96 in 1911, and to £182 in 1920-21. Allowing for the great rise in values, it is apparent that a rather greater proportionate increase occurred in the amount of capital invested in the first period than in the second, and the same remark applies to the value of manufacturing work done.

All things considered, the period of the last ten years was slower in development in secondary industries than the previous decade. The rapid growth which occurred between 1906 and 1911 was not maintained during the next quinquennium, and though war conditions provided an especially favourable period for development in local manufactories, the exigencies of the period, particularly in regard to obtaining supplies of suitable labour and machinery, impeded progress.

#### GOVERNMENT AND PRIVATE WORKSHOPS AND FACTORIES.

Until ten years ago, the establishments under Government control consisted almost entirely of railway workshops, dockyards, and other establishments engaged principally in the repair or renovation rather than in the actual manufacture of articles. Now, however, there are State factories producing such diverse articles as bricks and clothes. In view of the number and importance of State and Commonwealth industrial undertakings, the following table has been prepared to show the details of their operations in 1920-21, in comparison with those of other establishments:—

		Governmental.	Other.	Total.
Number of Establishments...	...	80	5,757	5,837
Number of Employees ...	{ Male ...	17,464	94,723	112,187
	{ Female ...	808	32,016	32,824
	{ Total ...	18,272	126,739	145,011
Salaries and Wages paid to Employees.*	{ Male ...	£ 4,225,722	18,504,494	22,766,216
	{ Female ...	£ 50,644	2,801,731	2,852,375
	{ Total ...	£ 4,276,366	21,342,225	25,618,591
Capital invested in Land, Buildings, and Fixtures...	...	£ 3,655,597	15,456,175	19,111,772
Rent paid ...	...	£ 3,860	617,283	621,143
Value of Plant and Machinery ...	...	£ 4,253,167	26,862,277	31,115,444
Machinery—Average Horse-power in use...	..	72,663	239,646	312,309
Value of Materials and Fuel used ...	...	£ 3,471,736	91,241,513	94,713,249
Value added to Raw Materials in process of Manufacture...	...	£ 4,696,170	38,431,967	43,128,137
Total Value of Output ...	...	£ 8,167,906	129,673,480	137,841,386

\* Excluding drawings of working proprietors.

† In the above table each of the various railway workshops is counted as a separate establishment.

In making comparisons between the results shown by Governmental and Other establishments, it should be noted that in the former repair work constitutes the largest portion of the work done; also that in such establishments the profit would appear in reducing the price of the product rather than in showing a large margin over cost.

## CLASSIFICATION OF MANUFACTURE.

The manufacturing industries have been arranged for purposes of reference and comparison into nineteen classes, in accordance with a standard classification adopted at a Conference of Statisticians.

The classes are as follow:—

**CLASS I.—TREATING RAW MATERIALS; THE PRODUCT OF AGRICULTURAL AND PASTORAL PURSUITS, ETC.**

Boiling-down Tallow, Refining, etc.  
Sausage Skins, etc.  
Tanneries.  
Wool-scouring, Fellmongering.  
Chaff-cutting, Corn-crushing, etc.

**CLASS II.—OILS AND FATS, ETC.**  
Oil and Grease.  
Soap and Candles.

**CLASS III.—STONE, CLAY, GLASS, ETC.**

Bricks and Tiles.  
Glass (in-burled Bottles).  
Glass (Ornamental).  
Lime, Plaster, Cement, and Asphalt.  
Marble, Slate, etc.  
Pottery and Earthenware (including Modelling, etc.).

**CLASS IV.—WORKING IN WOOD.**  
Boxes and Cases.  
Cooperage.  
Joinery.  
Saw-mills.  
Wood-turning, Wood-carving, etc.

**CLASS V.—METAL WORKS, MACHINERY, ETC.**

Agricultural Implements.  
Art Metal Works.  
Brass and Copper.  
Cutlery.  
Engineering.  
Galvanized Iron-working.  
Ironworks and Foundries.  
Railway Carriages, Rolling-stock, etc.  
Railway and Tramway Workshops.  
Smelting.  
Stoves and Ovens.  
Tinsmithing.  
Wire-working.  
Other Metal Works (including Nail and Lead Mills).

**CLASS VI.—FOOD AND DRINK, ETC.**

Bacon-curing.  
Butter-factories, Creameries, etc.  
Butterine and Margarine.  
Cheese Factories.  
Condensed Milk.  
Meat-preserving.  
Biscuits.  
Confectionery.

**CLASS VI.—FOOD AND DRINK, ETC.—continued.**

Cornflour, Oatmeal, etc.  
Flour-mills.  
Jam and Fruit-canning.  
Pickles, Sauces, and Vinegar.  
Sugar Mills.  
Sugar Refining and Distilling.  
Aerated Waters, Cordials, etc.  
Breweries.  
Condiments, Coffee, Spices, etc.  
Ice and Refrigerating.  
Malting.  
Tobacco, Cigars, etc.

**CLASS VII.—CLOTHING, AND TEXTILE FABRICS, ETC.**

Woolen and Tweed Mills.  
Hosiery and Knitted Goods.  
Boots and Shoes.  
Clothing (Shop).  
Clothing (Tailoring).  
Clothing (Waterproof and Oil-skin).  
Dressmaking and Millinery (Makers' Material).  
Dressmaking and Millinery (Customers' Material).  
Dyeworks and Cleaning.  
Furriers.  
Hats and Caps.  
Shirts, Ties, and Scarfs.  
Rope and Cordage.  
Sailmaking.  
Tents and Tarpaulins.

**CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.**

Electrotyping and Stereotyping.  
Paper-making, Paper Boxes, Bags, etc.  
Photo-engraving.  
Printing and Binding.

**CLASS IX.—MUSICAL INSTRUMENTS, ETC.**  
Musical Instruments and Sewing Machines.

**CLASS X.—ARMS AND EXPLOSIVES.**  
Arms and Explosives.

**CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.**

Coach and Waggon Building.  
Cycles and Motors.  
Perambulators.  
Saddlery, Harness, etc.  
Spokes, etc.  
Whips.

**CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.**  
Docks and Slips.  
Ship-building and Repairing.

**CLASS XIII.—FURNITURE, BEDDING, ETC.**

Bedding, Flock, and Upholstery.  
Chair-making.  
Furnishing, Drapery, etc.  
Furniture and Cabinet-making, and Billiard Tables.  
Picture Frames.  
Window Blinds.

**CLASS XIV.—DRUGS AND CHEMICALS.**

Chemicals, Drugs, and Medicines.  
Paints and Varnishes.  
Inks, Polishes, etc. (including Fertilisers).

**CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.**

Surgical, Optical, and other Scientific Instruments.

**CLASS XVI.—JEWELLERY, TIME-PIECES, AND PLATED-WARE.**

Electro-plating.  
Manufacturing Jewellery, etc.

**CLASS XVII.—HEAT, LIGHT, AND POWER.**

Coke-works.  
Electric Apparatus.  
Electric-light and Power.  
Gas-works and Kerosene.  
Lamps and Fittings, etc.  
Hydraulic Power.

**CLASS XVIII.—LEATHERWARE (N.E.I.).**

Leather Belting, Fancy Leather, Portmanteaux, and Bags.

**CLASS XIX.—MINOR WARES (N.E.I.).**

Basket and Wickerware, Matting, etc.  
Brooms and Brushware.  
Rubber Goods.  
Toys.  
Umbrellas.  
Other Industries.

The returns relate to establishments employing four or more than four persons engaged directly or indirectly in working at certain handicrafts, or in preparing or manufacturing articles for trade or sale, and to establishments employing less than four persons, where machinery, operated by steam, gas, electric, water, wind, or horse-power, is used. Establishments with less than four hands, where only manual labour is used, do not furnish returns, with the following exceptions:—Aerated water, bacon, butter and cheese factories, brick, gas, and lime works, quarries, soap and candle factories, tanneries and boot factories. Returns are furnished for all these establishments, in order to ascertain the total output of the various products.

The term "establishments" includes branches which, whether conducted in separate buildings or not, deal with separate branches of industry, and are therefore counted as industrial entities.

The foregoing definition, based on the number of workers, applies uniformly to all other industries, and includes tailoring, bootmaking, dressmaking, and millinery establishments. It does not, however, cover shops engaged only in retail trade and in the distribution or importation of goods; nor does it apply to bakeries, butcheries in which sausages and smallgoods are made, laundries, monumental masonry yards, and water-works.

With the exception of blacksmiths' and wheelwrights' shops, the definition covers establishments in which workers are engaged in repairing or assembling manufactured parts of an article.

If a manufacturing business is conducted in conjunction with an importing or a retail business particulars relating to the manufacturing section only are obtained, and persons employed in the importing or retail branch of the business are not included. Where two or more industries are being conducted a return is furnished for each industry; if power from the same generating plant is used for more than one industry it is proportionately distributed. The generation of electric light and power for use in other manufacturing operations, even if carried out on the premises, is treated as an independent industry.

The value of production includes the products of educational, charitable, and reformatory or other public institutions, excluding penitentiaries.

#### MOTIVE POWER.

The power used for driving machinery in factories is derived almost entirely from steam. Other agencies, principally gas, are used only to a limited extent, and, although there are electric engines of considerable voltage, they are employed mainly for lighting and tramway purposes, and the generation of their power depends upon some other class of engine.

The following table shows the distribution of motive-power through the various agencies of steam, gas, electricity (generated by steam-power), water and oil, expressed in units of horse-power, for the first and second quinquennial periods and succeeding years since federation:—

Year.	Establishments using Machinery.	Horse-power of Machinery (Average used).						Average H.P. per Establishment.
		Steam.	Gas.	Electricity.	Water.	Oil.	Total exclusive Electricity.	
1901	1,969	42,555	1,577	330	97	36	44,265	22
1906	2,496	70,192	4,212	8,989	75	277	74,756	30
1911	3,550	113,939	12,201	20,671	222	1,185	127,547	36
1912	3,775	130,479	16,028	26,652	273	1,181	147,961	39
1913	3,974	141,025	13,802	35,885	307	1,478	156,612	39
1914-15	3,987	158,718	14,552	50,179	283	1,885	175,438	44
1915-16	4,077	177,162	13,926	58,075	319	1,689	193,096	47
1916-17	4,272	159,712	13,312	61,702	274	1,830	175,128	41
1917-18	4,441	175,232	14,110	67,719	248	1,795	191,385	43
1918-19	4,451	181,611	14,227	74,567	63	1,935	197,836	44
1919-20	4,730	171,590	13,342	78,287	165	2,417	187,514	40
1920-21	5,002	192,816	13,242	103,846	24	2,381	208,463	41

During the twenty years under review the potential horse-power of the machinery in the State increased from 57,335 to 494,114; or, exclusive of

electric or secondarily-produced power, from 56,669 to 341,706. The development of electrical power is characteristic of the period, the full capacity of machinery so equipped advancing from 666 h.-p. in 1901, to 154,402 h.-p. in 1920-21. In all statements of the comparative horse-power of machinery it is, however, advisable to eliminate the electrical agency, as it is a reproduced or transmitted force originating from some other primal source.

The actual average motive force, exclusive of electricity, employed in operating machinery, amounted in all the factories of the State, in 1901, to 44,265 horse-power, and in 1920-21 to 208,463 horse-power. The average horse-power per establishment increased from 22 to 41, or by 84 per cent. during the period.

Exclusive of electrical power the proportion of average motive force used in operating machinery to potential motive-force was about 78 per cent. in 1901, and about 61 per cent. in 1920-21. Broadly speaking, the motive power of machinery is capable of supplying two-thirds more energy than that ordinarily operated.

#### ESTABLISHMENTS.

The following table shows the number of manufactories and works in the Metropolitan district and in the remainder of the State, together with the number of establishments in which machinery was installed :—

Year.	Metropolitan District.			Remainder of State.			New South Wales.		
	With Machinery.	Without Machinery.	Total.	With Machinery.	Without Machinery.	Total.	With Machinery.	Without Machinery.	Total.
1901	754	661	1,415	1,215	737	1,952	1,969	1,398	3,367
1906	1,136	635	1,771	1,360	730	2,090	2,496	1,365	3,861
1911	1,793	717	2,510	1,757	772	2,529	3,550	1,489	5,039
1912	1,964	686	2,650	1,811	701	2,512	3,775	1,387	5,162
1913	2,093	658	2,751	1,881	714	2,595	3,974	1,372	5,346
1914-5	2,154	709	2,863	1,832	573	2,405	3,986	1,282	5,268
1915-6	2,250	565	2,815	1,827	568	2,395	4,077	1,133	5,210
1916-7	2,416	589	3,005	1,856	495	2,351	4,272	1,084	5,356
1917-8	2,545	540	3,085	1,899	430	2,329	4,444	970	5,414
1918-9	2,575	578	3,153	1,876	431	2,307	4,451	1,009	5,460
1919-20	2,819	557	3,376	1,911	375	2,286	4,730	932	5,662
1920-21	2,987	536	3,523	2,015	299	2,314	5,002	835	5,837

Shipping facilities and an incomparable harbour have made Sydney the chief manufacturing centre of the State, but in some industries important works have been constructed at Newcastle in proximity to the coalfields. In the earliest days of the State's history, Sydney, as the first place of settlement, was of necessity the sole manufacturing town in the territory; in 1901, after more than a century of colonisation, the Metropolitan area contained over 42 per cent. of the manufacturing establishments in the State, and in 1921 this proportion had increased to 60 per cent.

In the country districts manufacturing enterprises are occupied mainly with the direct handling of primary products, but, at Newcastle, there have been constructed extensive iron and steel works, a galvanised-iron works, a large ship-building yard, a large ore-treating plant, and a number of other factories. At Lithgow, also on the coal-fields, an iron and steel foundry, and the Commonwealth small arms factory form the nucleus of growing secondary industries, while less important works are to be found at Wollongong.

The most important group of secondary industries in the State consists of metal and machinery works, followed in order by clothing and textile factories, and those engaged in making articles of food and drink, and book, paper, and printing works. Most of the important textile and clothing factories are situated in the Metropolitan Area, and about two-thirds of the work done in metal and machinery establishments is performed there. In country districts the order of precedence is much the same, metal works being most important, followed by food and drink, and wood-working establishments.

The following table shows the principal facts relating to each class of manufacturing industry conducted in the State and in the Metropolitan district during the year 1920-21 :—

Class of Industry.	Establishments.	Average Number of Employees.			Average Time worked per Employee.	Horse-power of Machinery—Average used.	Value of Machinery, Tools, and Plant.	Total Salaries and Wages, exclusive of Drawings of Working Proprietors.
		Males.	Females.	Total.				
NEW SOUTH WALES.								
Treating Raw Materials, etc. ...	221	3,688	152	3,840	months. 10-83	h.-p. 9,336	£ 857,651	£ 735,738
Oils, Fats, &c. ...	38	1,244	340	1,584	11-78	2,027	540,083	265,740
Processes in Stone, Clay, Glass, &c. ...	299	8,727	102	8,829	11-48	21,654	2,172,118	1,689,213
Working in Wood ...	798	9,009	148	9,157	11-00	19,760	1,249,687	1,589,929
Metal Works, Machinery, &c. ...	717	36,152	708	36,860	11-40	70,104	8,776,438	7,780,446
Connected with Food, Drink, &c. ...	782	12,294	5,580	17,874	11-07	34,278	5,621,432	2,933,469
Clothing, Textile Fabrics, &c. ...	1,066	8,378	19,920	28,298	11-70	7,680	1,231,236	3,257,942
Books, Paper, Printing, &c. ...	474	7,549	2,978	10,527	11-87	7,757	1,975,979	1,869,610
Musical Instruments, &c. ...	24	595	47	642	11-77	438	36,196	137,791
Arms and Explosives ...	4	843	7	850	12-00	757	96,900	209,954
Vehicles and Fittings, Saddlery, &c. ...	508	5,078	189	5,267	11-60	2,242	364,659	828,208
Ship and Boat-building, &c. ...	37	5,138	37	5,175	11-98	8,119	1,327,956	1,288,293
Furniture, Bedding, and Upholstery ...	297	3,759	553	4,312	11-73	2,682	188,087	750,079
Drugs, Chemicals, and By-products. ...	126	1,752	907	2,659	11-78	3,202	645,537	483,744
Surgical and other Scientific Instruments ...	15	165	41	206	12-00	59	13,977	33,875
Jewellery, Timepieces, and plated-ware. ...	71	734	94	828	11-65	361	42,530	155,164
Heat, Light, and Power ...	235	4,967	71	5,038	11-75	120,482	5,739,368	1,180,836
Leatherware, n.e.i. ...	34	603	316	919	11-90	165	27,724	126,722
Minor Wares, n.e.i. ...	91	1,512	634	2,146	11-82	1,206	207,886	301,838
Total ...	5,837	112,187	32,824	145,011	11-52	312,309	31,115,444	25,618,591
METROPOLITAN DISTRICT.								
Treating Raw Materials, &c. ...	114	2,676	150	2,826	11-50	7,832	721,779	596,133
Oils, Fats, &c. ...	24	947	281	1,228	11-95	1,508	435,693	210,500
Processes in Stone, Clay, Glass, &c. ...	152	5,710	68	5,778	11-55	8,905	924,907	1,112,105
Working in Wood ...	267	3,986	84	4,070	11-78	9,73	505,832	822,611
Metal Works, Machinery, &c. ...	541	22,002	641	22,643	11-88	7,459	3,268,605	4,772,754
Connected with Food, Drink, &c. ...	276	7,715	4,854	12,569	11-79	20,092	3,705,577	2,119,264
Clothing, Textile Fabrics, &c. ...	857	7,266	18,050	25,316	11-69	6,240	1,085,163	2,944,170
Books, Paper, Printing, &c. ...	289	6,338	2,864	9,202	11-87	6,946	1,635,143	1,650,118
Musical Instruments, &c. ...	24	595	47	642	11-77	438	36,196	137,791
Arms and Explosives ...	3	22	3	25	12-00	7	1,625	4,043
Vehicles and Fittings, Saddlery, &c. ...	273	3,383	136	3,519	11-54	1,447	217,936	574,294
Ship and Boat-building, &c. ...	32	3,455	10	3,465	11-99	3,905	941,939	878,719
Furniture, Bedding, and Upholstery ...	260	3,387	538	3,925	11-71	2,409	173,198	689,688
Drugs, Chemicals, and By-products. ...	113	1,510	899	2,409	11-90	2,540	451,137	438,845
Surgical and other Scientific Instruments ...	15	165	41	206	12-00	59	13,977	33,875
Jewellery, Timepieces, and Plated-ware. ...	68	711	93	804	11-66	358	41,285	152,065
Heat, Light, and Power ...	100	2,865	41	2,906	11-84	78,609	3,224,583	685,293
Leatherware, n.e.i. ...	33	600	316	916	11-90	162	27,456	126,260
Minor Wares, n.e.i. ...	82	1,470	633	2,103	11-84	1,171	205,665	299,017
Total ...	3,523	74,803	29,749	104,552	11-77	169,821	17,617,696	18,244,545



### SIZE OF ESTABLISHMENTS.

The following statement shows the distribution of establishments, according to the number of persons engaged, in the Metropolitan district and in the remainder of New South Wales, at intervals since the year 1901 :—

Establishments employing—	1901.†		1911.		1913.		1920-21.	
	Establish- ments.	*Em- ployees.	Establish- ments.	*Em- ployees.	Establish- ments.	*Em- ployees.	Establish- ments.	*Em- ployees.
<b>METROPOLITAN DISTRICT.</b>								
Under 4 employees	79	188	238	547	302	678	493	1,083
4 employees ...	105	420	179	716	190	760	230	920
5 to 10 employees	429	3,086	743	5,336	809	5,800	1,072	7,566
11 „ 20 „ ...	334	4,939	520	7,834	570	8,423	684	10,118
21 „ 50 „ ...	279	8,564	477	14,653	527	16,593	639	20,437
51 „ 100 „ ...	107	7,518	202	14,360	193	13,678	222	15,158
101 and upwards...	82	17,750	151	34,144	160	40,331	183	49,270
Total ...	1,415	42,415	2,510	77,592	2,751	86,263	3,523	104,552
<b>REMAINDER OF STATE.</b>								
Under 4 employees	439	1,094	538	1,282	569	1,347	513	1,173
4 employees ...	256	1,024	371	1,484	367	1,468	270	1,080
5 to 10 employees	768	5,333	993	6,817	1,010	6,920	864	5,896
11 „ 20 „ ...	294	4,236	381	5,390	381	5,457	380	5,351
21 „ 50 „ ...	142	4,612	164	4,874	175	5,219	181	5,569
51 „ 100 „ ...	30	2,086	40	2,858	47	3,311	43	2,903
101 and upwards...	23	5,430	42	8,327	46	10,415	63	18,487
Total ...	1,952	23,815	2,529	31,032	2,595	34,137	2,314	40,459
<b>NEW SOUTH WALES.</b>								
Under 4 employees	518	1,282	776	1,829	871	2,025	1,006	2,256
4 employees ...	361	1,444	550	2,200	557	2,228	500	2,000
5 to 10 employees	1,197	8,369	1,736	12,153	1,819	12,720	1,936	13,462
11 „ 20 „ ...	628	9,175	901	13,224	951	13,880	1,064	15,469
21 „ 50 „ ...	421	13,176	641	19,529	702	21,812	820	26,006
51 „ 100 „ ...	137	9,604	242	17,218	240	16,989	265	18,061
101 and upwards...	105	23,180	193	42,471	206	50,746	246	67,757
Total ...	3,367	66,230	5,039	108,624	5,346	120,400	5,837	145,011

\*Including working proprietors.

† Excluding a number of small establishments in country districts (see Year Book 1907-8, page 448).

From the foregoing table it will be seen that establishments employing 10 hands or less represent nearly 60 per cent. of the total number. The factories in the Metropolitan area, on the whole, are larger than those in the remainder of the State. The great development in the past twenty years has been towards larger establishments, although the number of small factories which have sprung up is very great.

The relative position of each group of establishments is presented in the following statement :—

[illegible]

The average number of employees per establishment is 30 in the Metropolitan, 17 in the remainder of the State, and 25 in the whole State; in 1901 the averages were 30, 12, and 20 respectively.

In the Metropolitan district the tendency towards an increase in the number of small workshops and factories has produced a decline in the proportion of larger establishments; nevertheless, the proportion of hands employed in factories employing over 10 hands has increased since 1901.

Since 1913 the number of establishments in New South Wales has increased by 9·2 per cent., and the number of employees by 20 per cent. During the war there was a large withdrawal of male labour from industrial employment, and the number of persons employed in manufactories and works fell below that of 1913, but the leeway has been recovered, and the persons now employed number approximately 25,000 more than in 1913.

#### CAPITAL INVESTED IN PREMISES.

With regard to capital permanently invested in manufacturing industries, particulars are available only of the value of land, buildings, and fixtures which are the property of the occupier; if they are not the property of the occupier the rental value is recorded.

The following statement shows the extent to which, since 1901, the capital value of the premises used for manufacturing purposes has increased, also the advance in the value of plant and machinery installed:—

Year.	No. of Establishments.	Capital Value of Premises (owned and rented).	Value of Machinery, Tools, and Plant.	Average per Establishment.	
				Value of Premises.	Value of Machinery, Tools and Plant.
		£	£	£	£
1901†	3,367	7,838,628	5,860,725	2,328	1,741
1906	3,861	*9,335,966	8,407,337	2,418	2,178
1911	5,039	13,140,207	12,510,600	2,608	2,483
1912	5,162	14,395,026	13,795,195	2,789	2,672
1913	5,346	15,405,018	14,861,676	2,882	2,780
1914-15	5,269	16,843,698	16,866,982	3,197	3,201
1915-16	5,210	17,770,517	18,211,104	3,410	3,495
1916-17	5,356	18,920,057	20,364,122	3,532	3,802
1917-18	5,414	20,533,171	21,739,739	3,793	4,015
1918-19	5,460	22,081,877	23,651,152	4,044	4,332
1919-20	5,662	24,108,590	26,366,083	4,263	4,657
1920-21	5,837	28,428,917	31,115,444	4,870	5,331
Percentage Increases, 1901-1921...	73·4	262·7	430·9	109·2	203·2

\* Value in 1907. † Excluding a number of small country establishments.

The premises owned by the occupiers in 1920-21 were valued at £19,111,772, and rented premises at £9,317,145, the valuation of the latter being based on the rent paid, capitalised at fifteen years' purchase.

It will be noted that the value of machinery and plant became greater in 1914-15, and since that date has grown at a faster rate than that of the land and buildings. The great advance, particularly during the last six years, in the value of the former, is due partly to the extension of industries and partly to inflated values.

#### SALARIES AND WAGES.

The amount of salaries and wages quoted throughout this chapter is exclusive of amounts drawn by working proprietors.

The salaries and wages paid to employees in manufactories and works amounted in 1920-21 to £25,618,591; male workers received £22,766,216, equal to £210 19s. 10d. per head; and female workers, £2,852,375, or £87 12s. 2d. per head.

A comparison of the total amount of salaries and wages paid since 1901 is shown below, together with the average amount received and the average time worked per employee:—

Year.	Salaries and Wages (exclusive of drawings by Working Proprietors).				Wages Levels. 1911 = 1000.			Average time Worked per Employee.
	Total.	Average per Employee.			Males.	Females.	Total.	
		Male.	Female.	Total.				
	£	£ s. d.	£ s. d.	£ s. d.				months.
1901	4,952,000	*	*	81 0 0	*	*	839	11·32
1906	5,591,888	*	*	77 9 7	*	*	804	11·45
1911	10,047,662	114 4 9	43 2 1	96 7 1	1000	1000	1000	11·55
1912	11,592,052	122 10 0	48 7 9	104 8 10	1072	1123	1085	11·59
1913	12,683,384	127 15 4	50 5 10	109 13 2	1118	1167	1138	11·62
1914-15	12,667,721	130 19 3	52 18 10	112 18 11	1146	1228	1172	11·46
1915-16	13,413,845	141 9 1	53 14 6	119 5 11	1238	1246	1238	11·56
1916-17	14,381,309	149 6 11	57 9 10	126 3 3	1307	1334	1309	11·55
1917-18	14,701,255	148 18 8	61 5 6	126 3 7	1304	1422	1309	11·47
1918-19	16,957,919	160 16 4	65 9 3	137 6 6	1408	1519	1425	11·57
1919-20	21,681,196	181 1 1	74 6 8	154 17 6	1585	1724	1607	11·54
1920-21	25,618,591	210 19 10	87 12 2	182 7 10	1847	2032	1893	11·52

\* Not available.

Since 1911 the average wages of males have increased by over 84 per cent., and of females by 103 per cent.; it should be noted, moreover, that the proportion of juvenile labour was slightly less in the earlier year, when boys under 16 represented 3 per cent. of the total males, compared with 3·3 per cent. in 1921, and girls under 16 represented 8·5 per cent. of all females employed, as against 10·1 per cent. in 1921.

Comparing the wages in 1921 with those of 1913, the year before the war, it will be seen that, notwithstanding the average working period was less, the average wage of males rose from £127 15s. 4d. to £210 19s. 10d., and of females from £50 5s. 10d. to £87 12s. 2d.; the rates of increases are 65·1 per cent. and 74·2 per cent. respectively.

The average wage of males is highest in the shipbuilding and arms and explosives industries, in which the average amounts paid per worker in

1920-21 were £251 1s. 3d. and £248 14s. 4d. respectively. This is due in a large measure to the high proportion of highly-skilled labour employed. No other industry pays an average wage approaching these amounts. The lowest average wage, £177 5s. 1d., was received by vehicle and saddlery workers.

Of the female workers, those employed in the clothing industries received an average wage of £88 10s. 10d. in 1920-21, being 15s. 11d. more than was paid to employees engaged in printing, book-binding, etc.

#### VALUE OF PRODUCTION FROM MANUFACTORIES, AND COSTS.

In previous tables showing the value of production from manufactories, returns from establishments treating milk products were included.

The value of goods manufactured or of work done in 1920-21, excluding the production of establishments dealing with milk products, amounted to £128,577,887. Of this amount, £86,450,140 represents the cost of materials used and fuel consumed, the value added by processes of treatment, inclusive of salaries and wages, being £42,127,747.

The following table shows the proportion of each item combined in the process of production to the total output:—

Heading.	Industries connected with Milk Products.	Other Industries.	All Industries.	Proportion of Total Output.
	£	£	£	per cent.
Materials ... ..	8,017,379	83,087,126	91,104,505	66·1
Fuel, including Motive-power rented ...	245,730	3,363,014	3,608,744	2·6
Salaries and Wages ... ..	244,767	25,373,824	25,618,591	18·6
Total ... ..	8,507,876	111,823,964	120,331,840	87·3
Output, or Goods Manufactured and Work done.	9,263,499	128,577,887	137,841,386	100
Balance for general Purposes and Profit...	755,623	16,753,923	17,509,546	12·7

Thus, out of every hundred pounds' worth of goods produced in manufactories in 1920-21, the materials used and the fuel consumed in the manufacture thereof cost £68 14s., while the workers received £18 12s., leaving a balance of £12 14s. for the payment of overhead charges and for profits.

There are, of course, numerous items to be considered before profits accrue. The cost of these cannot be determined accurately, but from the information available it is possible to make a fairly reliable estimate with regard to some very important items, namely, depreciation, and interest on invested capital.

Excluding Government workshops and factories from consideration, the capital invested in lands, buildings, and fixtures in 1920-21 amounted to £15,456,000. Municipal valuations would indicate that the unimproved value of property is about 37·5 per cent. of the improved value, and on this basis the value of the buildings and fixtures would be about £9,660,000. Factory buildings probably depreciate in value more quickly than any other class of buildings, and therefore 4 per cent. can be regarded as a moderate rate to be allowed yearly on that account.

Depreciation of plant is more rapid, and varies considerably in different industries. As a result of inquiries made of some of the largest manufacturers in various industries and of the managers of State undertakings, it is estimated that 6½ per cent. is a fair average allowance for depreciation of plant and machinery. The allowance to be made for depreciation of land, buildings, and fixtures would therefore be about £386,000, and on plant and machinery £1,746,000, or a total of £2,132,000.

In addition to the allowance for depreciation, a further allowance should be made for interest on invested capital. The capital invested in machinery and plant is £26,862,000, and in land and buildings £15,456,000; to this must be added the capital represented by goods awaiting treatment and by manufactured goods awaiting disposal. It has been ascertained that the average value of materials on hand awaiting treatment represents about 21·5 per cent. (equal to about two and a half months' supply) of the value of all material used during the year, which would indicate that during 1920-21 approximately £19,617,000 were thus invested. The value of unsold stocks on hand is about 5 per cent. of the total value of the output, which would represent a further investment of capital to the extent of £6,484,000. The total capital invested in 1920-21, therefore, was about £68,419,000. Interest on this amount at 6 per cent., which is the rate payable on Government loans, would be £4,105,000. The estimated allowance to be made for depreciation and interest would therefore be £6,237,000, to which must be added cost of rented premises £617,000, so that £6,854,000 should be deducted in respect of charges which must be taken into account before profits can be estimated. This would reduce the balance remaining after payment of wages, material, and fuel to £10,236,000 equal to 7·9 per cent. of the total output, or 8·6 per cent. of cost of all items mentioned above, and such items of expense as insurance, advertising, rates and taxes would still have to be paid.

The varying proportions of the items which make up the total value of output in various years since 1901 have been as follow :—

Year.	Proportion per cent. of Total Value of Output absorbed by—				Total.
	Materials.	Fuel.	Wages.	Profit and Overhead Charges.	
1901	59·0	2·0	19·3	19·7	100
1906	64·0	1·8	16·1	18·1	100
1911	61·9	2·3	18·6	17·2	100
1912	60·7	2·2	18·9	18·2	100
1913	61·7	2·1	19·3	16·9	100
1914-15	62·3	2·0	18·6	17·1	100
1915-16	62·3	2·2	18·9	16·6	100
1916-17	66·4	2·0	16·7	14·9	100
1917-18	67·0	2·1	15·2	15·7	100
1918-19	66·5	2·2	16·2	15·1	100
1919-20	65·5	2·2	17·6	14·7	100
1920-21	66·1	2·6	18·6	12·7	100

It will be observed that the proportionate expenditure on materials was higher during recent years than formerly, representing approximately two-thirds of the total value of the products; the proportionate cost of fuel used is low, but it has risen appreciably since 1901. Apart from these items, which are more or less fixed charges, there are the items of salaries and wages, overhead expenses and profits to be met. The proportionate amount of the output absorbed by these has been considerably less in recent years than before the war, but even then a certain amount of falling-off was evident. This may be attributable rather to the rapid advance in the prices of raw materials and fuel than to any relative decline in wages or profits. It is noteworthy that, after the outbreak of war, a decline occurred in the proportions absorbed by salaries and wages, and other expenses and profits, but whereas a recovery in wages began in 1918-19, the proportion left for

profit and overhead charges has continued to diminish. It should be remembered, however, that these proportions have no relation to capital invested.

The following table shows, in each class of industry, the value of goods manufactured and of work done, the cost of materials used and of fuel consumed, the amount paid in wages and salaries, and the proportion of the total value of output which each of these charges represented in the year 1920-21 :—

Class of Industry.	Goods Manufactured, and Work done.	Materials used.	Fuel consumed, including Motive-power rented.	Salaries and Wages.	Proportionate Value of Manufactured Goods represented by—				
					Materials used.	Fuel, etc.	Salaries and Wages.	Balance.	
Treating Raw Material, Pastoral Products	£ 7,254,180	£ 5,741,605	£ 93,132	£ 735,738	per cent. 79.1	per cent. 1.3	per cent. 10.1	per cent. 9.5	
Oils and Fats, &c.	3,384,496	2,545,635	66,836	265,740	75.2	2.0	7.8	15.0	
Processes in Stone, Clay, Glass, &c.	4,677,903	1,309,305	511,890	1,689,213	28.0	10.9	36.1	25.0	
Working in Wood	6,604,229	4,148,158	48,069	1,589,929	62.8	0.7	24.1	12.4	
Metal Works, Machinery, &c.	32,643,806	20,562,008	1,455,921	7,780,446	62.9	4.5	23.8	8.8	
Connected with Food and Drink, &c.	43,902,378	36,552,051	436,582	2,933,469	83.3	1.0	6.7	9.0	
Clothing and Textile Fabrics, &c.	13,887,355	8,142,022	79,328	3,257,942	58.6	0.6	23.5	17.3	
Books, Paper, Printing, &c.	6,442,634	3,332,925	75,840	1,869,610	51.7	1.2	29.0	18.1	
Musical Instruments, &c.	387,101	150,425	2,221	137,791	38.8	0.6	35.6	25.0	
Arms and Explosives	301,450	33,108	2,720	209,954	11.0	0.9	69.6	18.5	
Vehicles, Fittings, and Saddlery, &c.	2,191,179	978,818	22,864	828,208	44.7	1.0	37.8	16.5	
Ship and Boat-building, &c.	2,228,863	740,118	28,855	1,288,293	32.2	1.3	57.8	7.7	
Furniture, Bedding, and Upholstery	2,371,138	1,312,759	14,992	750,079	55.4	0.6	31.6	12.4	
Drugs, Chemicals, and By-products	3,688,829	2,386,232	31,398	483,744	64.6	0.9	13.1	21.4	
Surgical and other Scientific Instruments	85,455	36,392	693	33,875	42.6	0.8	39.6	17.0	
Jewellery, Timepieces and Plated-ware	369,074	145,715	3,570	155,164	39.4	1.0	42.0	17.6	
Heat, Light, and Power	5,533,194	1,823,662	717,719	1,180,836	32.9	13.0	21.3	32.8	
Leatherware, N.E.I.	618,794	415,981	1,281	126,722	67.2	0.2	20.5	12.1	
Minor wares, N.E.I.	1,269,328	747,586	14,633.3	301,538	58.9	1.2	23.8	16.1	
Total	137,841,386	91,104,505	3,608,744	25,618,591	66.1	2.6	18.6	12.7	

\*Exclusive of drawings of working proprietors.

It is interesting to note the extent to which the value of materials is enhanced by the processes of treatment. For all industries materials were 66.1 per cent. of the value of the output, but there was great diversity amongst the various classes, the proportion ranging from 32.9 per cent. in those industries dealing with heat, light, and power, to 83.3 per cent. in those treating the raw material of food and drink products. These variations can be understood readily when the wide difference between the operations of the industries is considered, and the value of the plant and machinery employed is taken into account. Extensive plant alone is not a factor in the creation of high values, this being rather the result of the extensive use of machinery, and the industries dealing with food and those engaged in shipbuilding may be cited as examples. In the former class materials represent 83.3 per cent. and wages only 6.7 per cent. of the total value, while in the latter class the total wages paid amount to a sum 75 per cent. in excess of the value of materials used, and represent 61.2 per cent. of the total cost. It must be noted that in local shipyards a very large proportion of the work consists of repairs and renovations in which the cost of materials is much less than in the actual manufacture, and owing to the nature of the employment little machinery is brought into requisition.

The ratio of the total amount of wages to the value of production, that is, the value added to raw materials, varied during the last ten years from 50·9 per cent. in 1910 to 53·3 per cent. in 1913, and in 1920-21 it represented 59·3 per cent. The ratio varies considerably in different industries, as will be seen in the following table, which covers the year 1913 and the five years 1916-21 :—

Class of Industry.	1913.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Treating Raw Material, etc. ...	48·2	37·6	30·2	37·1	31·4	51·8
Oils, Fats, etc. ...	24·7	32·8	22·7	27·3	29·9	34·4
Processes in Stone, Clay, Glass, etc. ...	57·0	58·7	62·4	60·7	58·6	59·1
Working in Wood ...	68·8	65·5	62·4	68·7	64·2	66·0
Metal Works, Machinery, etc. ...	57·9	56·7	51·4	57·1	78·3	73·2
Connected with Food, Drink, etc. ...	36·2	39·2	36·9	38·6	35·7	42·4
Clothing, Textile Fabrics, etc. ...	65·5	61·0	62·1	59·3	58·6	57·5
Books, Paper, Printing, etc. ...	61·6	61·2	56·6	59·6	57·2	61·6
Musical Instruments, etc. ...	56·8	64·5	60·4	60·8	61·7	58·8
Arms and Explosives ...	*61·8	*22·4	*39·5	*38·3	*47·2	*43·0
Vehicles and Fittings, Saddlery, etc. ...	64·5	70·4	68·6	70·0	67·1	69·6
Ship and Boat-building, etc. ...	82·7	96·7	90·8	90·7	91·2	88·2
Furniture, Bedding, and Upholstery ...	69·3	71·7	68·9	69·8	69·4	71·9
Drugs, Chemicals, and By-products ...	28·7	30·0	25·4	25·5	31·2	38·0
Surgical and other Scientific Instruments	59·1	55·2	46·5	50·7	64·8	70·0
Jewellery, Time-pieces, and Plated-ware	65·6	69·8	72·4	70·4	66·2	70·6
Heat, Light, and Power ...	26·4	28·8	29·5	27·6	33·6	39·5
Leatherware, N.E.I. ...	55·3	53·8	53·7	53·3	59·3	62·9
Minor Wares, N.E.I. ...	57·8	64·8	65·5	58·5	60·3	59·5
Total* ...	53·3	52·8	48·8	51·6	55·1	59·3

\* Excluding Commonwealth Small Arms Factory.

#### EMPLOYMENT.

The relative importance of the different classes of manufacturing industries based on their capacity to employ human labour, is shown in the following comparative statement of average number of persons engaged :—

Class of Industry.	Persons engaged, including Working Proprietors.				
	1901.	1911.	1913.	1919-20.	1920-21.
Treating Raw Material, etc.: Pastoral Products	2,981	3,890	3,992	4,474	3,840
Oils and Fats: Animal, Vegetable, etc. ...	698	889	923	1,744	1,584
Processes in Stone, Clay, Glass, etc. ...	3,102	5,695	6,563	8,142	8,829
Working in Wood ...	5,108	8,181	9,293	9,205	9,157
Metal Works, Machinery, etc. ...	13,831	22,862	27,619	32,057	36,860
Connected with Food, Drink, etc. ...	11,372	14,050	15,197	19,282	17,874
Clothing, Textile Fabrics, etc. ...	14,497	26,504	26,565	29,429	28,298
Books, Paper, Printing, etc. ...	5,573	9,134	10,009	10,647	10,527
Musical Instruments, etc. ...	226	387	406	596	642
Arms and Explosives ...	11	33	379	819	850
Vehicles and Fittings, Saddlery, etc. ...	2,541	4,416	4,550	5,150	5,267
Ship and Boat Building, etc. ...	1,541	2,429	3,358	6,908	5,175
Furniture, Bedding, and Upholstery ...	2,140	3,534	4,035	4,364	4,312
Drugs, Chemicals, and By-products ...	450	1,460	1,365	2,620	2,659
Surgical and other Scientific Instruments	69	96	97	199	206
Jewellery, Timepieces, and Plated-ware	165	752	816	896	828
Heat, Light, and Power ...	1,417	2,795	3,577	4,758	5,038
Leatherware, N.E.I. ...	117	461	525	1,031	919
Minor Wares, N.E.I. ...	391	1,055	1,131	2,133	2,146
Total ...	66,230	108,624	120,400	144,454	145,011

During the quinquennial period, 1901-6, the increase in the number of persons engaged in manufacturing industries was 11,592; during the next quinquennial period, 1906-11, it amounted to 30,802; but during the period 1911-16 it was only 7,777. Owing to enlistments for war service, there was a decline of 3,789 persons during the two years 1913-15, and during 1915-16 a further decline of 210 persons; but in each succeeding year the number increased. In 1920-21 the increase was small, probably owing to the unsettled condition of markets.

During the past twenty years the number of employees in manufacturing industries increased by 118·9 per cent., while the general population increased by 54·7 per cent., the corresponding annual rates being 4·0 and 2·1 per cent. respectively. The very great proportionate growth of factories between 1906 and 1911, and the slackening between 1911 and 1916 are shown in the following comparison :—

Period.	Increase in Employees.	Increase in Population.
1901-06 (5 years) ...	17·5 per cent.	8·9 per cent.
1906-11 (5 years) ...	39·6 „	13·6 „
1911-16 (4½ years)...	7·1 „	11·2 „
1916-21 (5 years) ...	24·6 „	11·2 „

The following table shows the average number of persons engaged in manufacturing industries in the Metropolitan area and in the remainder of the State since 1901 :—

Year.	Employees (including Working Proprietors).			Year.	Employees (including Working Proprietors).		
	Metropolitan District.	Remainder of State.	Total.		Metropolitan District.	Remainder of State.	Total.
1901	42,415	23,815	66,230	1915-16	85,365	31,036	116,401
1906	52,605	25,217	77,822	1916-17	85,404	32,593	117,997
1911	77,592	31,032	108,624	1917-18	88,019	32,535	120,554
1912	83,352	32,209	115,561	1918-19	92,762	34,829	127,591
1913	86,263	34,137	120,400	1919-20	107,777	36,677	144,454
1914-15	84,971	31,640	116,611	1920-21	104,552	40,459	145,011

During 1920-21 the number of workers in the Metropolitan area decreased by 3,225, but there was an increase of 3,782 workers in the country, and a net increase of 557 in the whole State.

Under the classification of "Remainder of State" are included such urban centres as Newcastle, Broken Hill, Parramatta, Granville, Lithgow, Wollongong, Goulburn, and Bathurst, yet it is significant that Sydney and its suburbs constitute the chief manufacturing centre of the State, and that whereas the number of employees in the Metropolitan district increased by 62,137, or 146·5 per cent., from 1901 to 1920, the increase in all other parts of the State was only 16,644 persons, or 70 per cent.

The increase in the number of employees of each sex during the decennium, 1911-21, is shown below :—

Year.	Metropolitan District.		Remainder of State.	
	Males.	Females.	Males.	Females.
1911	53,658	23,974	28,465	2,567
1920-21	74,803	29,749	37,384	3,075
Increase per cent.	39·4	24·1	31·3	19·8



Relatively speaking, there is no marked difference between the rates of increase in employment of either sex, but the proportion of females employed is far greater in the Metropolitan area than in the country districts.

#### *Time Worked.*

The capacity of manufactories to afford employment may also be measured by the regularity of their working. Generally speaking, employment in the factories of New South Wales has been very constant during the past ten years. This may be illustrated by the following statement, which shows for each class of industry the average time worked per employee (inclusive of working proprietors) in representative years since 1911:—

Class of Industry.	1911.	1913.	1918-19.	1919-20.	1920-21.
	Months.	Months.	Months.	Months.	Months.
Treating Raw Material ...	10-11	9-98	10-73	10-88	10-83
Oils and Fats ...	11-38	11-95	11-72	11-39	11-78
Stone, Clay, Glass ...	11-56	11-47	11-35	11-39	11-48
Working in Wood ...	10-82	11-09	10-93	10-90	11-00
Metal Works, Machinery ...	11-70	11-87	11-61	11-63	11-49
Food, Drink, etc. ...	11-10	11-29	11-25	11-18	11-07
Clothing, Textile Fabrics ...	11-64	11-81	11-80	11-76	11-70
Books, Paper, Printing ...	11-89	11-93	11-91	11-83	11-87
Musical Instruments ...	12-00	12-00	12-00	11-64	11-77
Arms and Explosives... ..	8-21	11-96	12-00	12-00	12-00
Vehicles, Saddlery ...	11-83	11-72	11-78	11-62	11-60
Ship Building ...	11-98	11-94	11-89	11-98	11-98
Furniture, Bedding ...	11-58	11-53	11-67	11-59	11-73
Drugs, Chemicals ...	11-77	11-87	11-76	11-94	11-78
Surgical Instruments... ..	12-00	11-35	12-00	11-94	12-00
Jewellery ...	11-98	11-94	11-85	11-86	11-65
Heat, Light, and Power ...	11-81	11-65	11-72	11-46	11-75
Leatherware, N.E.I. ...	11-91	11-86	11-97	11-80	11-90
Minor Wares, N.E.I. ...	11-51	11-89	11-54	11-51	11-82
Mean of all Industries ...	11-55	11-62	11-57	11-54	11-52

The factories in which employment is least regular are those engaged in treating raw material and working in wood; it will be observed that a number are so regular as to be almost continuous.

#### CHILD LABOUR.

The law regulating primary education prescribes that children must attend school until the completion of their fourteenth year, exception being made only in case of those who, prior to reaching that age, have obtained exemption certificates. The Shops and Factories Act of 1896 prohibited the employment of children under the age of 14 in any factory, unless by special permission of the Minister for Labour and Industry; but such special permission may not be given to a child under the age of 13 years. Permission is not granted, except in extreme circumstances, to any girl under the age of 14 years.

Of 7,283 juveniles engaged in manufacturing, 6,237 were employed in factories within the Metropolitan area. Reviewing the statistics of juveniles since 1896, it is noticeable that in the past boys formed consistently a larger body than girls, but the numbers now agree very closely. About 93 per cent. of the girls employed were working in Sydney and suburbs, but one-fourth of the boys were employed in establishments located outside the Metropolitan area.

*Certificates of Physical Fitness.*

The employment in a factory of juveniles under the age of 16 years is conditional upon a medical certificate as to physical fitness being secured by the factory occupier under the Factories and Shops Acts.

During the year 1921 certificates were issued to 6421 juveniles as follows:—Metropolitan District, 2839 boys and 3036 girls; Newcastle, 293 boys and 126 girls; Broken Hill, 12 boys; and in the rest of the State 92 boys and 23 girls.

*Special Permits to Work.*

Special permits to work in a factory were issued during 1921 to 169 children between the ages of 13 and 14 years in the following districts:—Metropolitan, 121 boys and 44 girls; Newcastle, 2 boys; Broken Hill, 1 boy, and in the rest of the State, 1 boy.

## SEX AND AGE DISTRIBUTION.

The following table shows the sex and age distribution of the persons engaged in manufactories from 1907, the first year for which statistics respecting child employment are available, to 1921:—

Year.	Persons Employed in Manufactories, including Working Proprietors.								
	Adults.			Children under 16 years of age.			Adults and Children.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1907	63,547	18,634	82,181	2,406	1,880	4,286	65,953	20,514	86,467
1911	79,609	24,274	103,883	2,474	2,267	4,741	82,083	26,541	108,624
1912	85,953	25,290	111,243	2,225	2,093	4,318	88,178	27,383	115,561
1913	90,651	25,278	115,929	2,385	2,086	4,471	93,036	27,364	120,400
1914-15	87,972	23,876	111,848	2,437	2,326	4,763	90,409	26,202	116,611
1915-16	85,146	26,072	111,218	2,578	2,605	5,183	87,724	28,677	116,401
1916-17	86,306	26,638	112,944	2,604	2,449	5,053	88,910	29,087	117,997
1917-18	87,441	27,938	115,379	2,584	2,591	5,175	90,025	30,529	120,554
1918-19	94,298	28,146	122,444	2,586	2,561	5,147	96,884	30,707	127,591
1919-20	106,012	30,854	136,866	3,824	3,764	7,588	109,836	34,618	144,454
1920-21	108,514	29,214	137,728	3,673	3,610	7,283	112,187	32,824	145,011

During the year 1920-21 there was an increase of 2,351 in the number of males employed and a decrease of 1,794 in the number of females. Male adults increased by 2,502 and females decreased by 1,640; 305 fewer children were employed, 151 boys and 154 girls.

The following statement shows the number of children employed in factories per 1,000 adults employed:—

Year.	Proportion of Children per 1,000 Adults.		
	Boys.	Girls.	Total.
1907	27·8	21·7	49·5
1911	22·8	20·9	43·7
1913	19·8	17·3	37·1
1914-15	20·9	19·9	40·8
1915-16	22·1	22·4	44·5
1916-17	22·1	20·7	43·8
1917-18	21·4	20·7	42·1
1918-19	20·3	20·0	40·3
1919-20	26·5	26·0	52·5
1920-21	25·3	24·9	50·2

The proportion of children employed is now about the same as in 1907; boys and girls are employed in equal proportions per 1,000 adults.

Though war conditions produced an increase in the proportion of female employees in factories, it is gratifying to note that this increase was temporary. The proportions of children employed are small, but they have shown slight increases in recent years. Seventy-five per cent. of the labour employed in factories consists of adult males. The number of boys under 16 is about 3 per 100 male adults. The ratio is highest in biscuit factories, where there are usually more than 20 boys to 100 men employed, although in 1920-21 there were 35. The only other industry employing more than 10 boys per 100 male adults was tinsmithing.

Under a factory system of production the employment of women and children always tends to increase. In New South Wales legislation has been introduced to keep such employment within limits considered conducive to the general good of the community, and it may be noted that the proportion of female and juvenile labour has remained fairly constant.

The following table shows, for the year 1911 and the last two years, the industries in which women and girls have been employed in greatest numbers, and the ratio to every 100 males employed in the same industries. Only workers in the factory have been included, that is to say, managers, overseers, clerks, messengers, etc., have been excluded.

Industry.	Average Number of Women and Girls employed in factory.			Number of Women and Girls per 100 Males employed in factory.		
	1911.	1919-20.	1920-21.	1911.	1919-20.	1920-21.
Food, etc.—						
Aerated Waters ... ..	128	84	81	14	14	14
Biscuits ... ..	690	847	822	121	96	102
Condiments, Coffee, and Spices...	209	659	545	122	145	125
Confectionery ... ..	442	1,387	1,190	70	121	113
Cornflour, Oatmeal ... ..	181	127	125	97	76	68
Jam and Fruit-canning ... ..	440	755	721	137	146	113
Meat-preserving ... ..	117	176	26	14	20	29
Pickles, Sauces, and Vinegar ...	170	246	230	195	181	163
Tobacco ... ..	746	1,340	1,262	128	148	131
Clothing, etc.—						
Dressmaking and Millinery ...	4,650	4,974	4,249	11,071	7,209	5,119
Hats and Caps ... ..	995	869	815	227	154	159
Waterproofs and Oilskins ... ..	97	124	106	539	496	505
Shirts, Ties, and Scarfs... ..	1,599	1,864	1,817	1,859	1,759	1,781
Slop Clothing ... ..	5,026	3,542	3,798	601	607	632
Tailoring ... ..	2,702	3,309	2,927	163	257	276
Furriers ... ..	24	133	129	114	208	182
Woollen and Tweed Mills ... ..	561	718	793	172	108	101
Hosiery and Knitted Goods ... ..		867	1,186		662	663
Dyeworks and Cleaning ... ..	22	116	105	92	93	76
Tents and Tarpaulins ... ..	230	296	255	230	293	274
Boots and Shoes ... ..	1,499	1,767	1,612	61	64	61
Chemicals, Drugs, and Medicines ...	325	655	540	89	99	79
Bedding, Flock, and Upholstery ...	96	145	122	28	40	34
Brooms and Brushware ... ..	9	42	60	5	19	25
Furnishing, Drapery, etc. ... ..	160	262	296	239	364	435
Inks, Polishes, etc. ... ..	...	162	170	...	103	93
Leatherware ... ..	56	348	279	16	62	57
Manufacturing Jewellery ... ..	47	68	51	11	14	12
Paper, Paper Bags, and Boxes ...	727	1,043	827	201	144	119
Printing and Book-binding ... ..	1,387	1,655	1,711	29	33	34
Rubber Goods ... ..	59	335	344	28	58	57
Soap and Candles ... ..	144	302	286	39	55	59
Tinsmithing ... ..	34	176	195	5	21	29
Other Industries ... ..	815	1,808	1,927	2	3	3
Total ... ..	24,387	31,201	29,602	36	34	32

Manufacturing industries provide employment for about 7 per cent. of the total population; more than 10 per cent. of males find employment therein, but only about 3 per cent. of females.

The following table shows the number of males and females employed in factories per 1,000 of the male and female populations respectively :—

Year.	Males.		Females.		Total.	
	Number.	Average per 1,000 of Male Population.	Number.	Average per 1,000 of Female Population.	Number.	Average per 1,000 of Total Population.
1911 ... ..	82,083	94.4	26,541	33.3	108,624	65.2
1912 ... ..	88,178	96.1	27,383	33.1	115,561	66.3
1913 ... ..	93,036	96.9	27,364	31.8	120,400	66.1
1914-15 ... ..	90,409	91.7	26,202	29.2	116,611	61.9
1915-16 ... ..	87,724	90.1	28,677	31.1	116,401	61.4
1916-17 ... ..	88,910	93.3	29,087	30.9	117,997	62.3
1917-18 ... ..	90,025	93.6	30,529	31.8	120,554	62.7
1918-19 ... ..	96,884	98.0	30,707	31.4	127,591	64.9
1919-20 ... ..	109,836	105.5	34,618	34.7	144,454	70.9
1920-21 ... ..	112,187	105.2	32,824	32.1	145,011	69.4

## OCCUPATIONAL STATUS.

Of all the persons engaged in manufacturing industries during the year 1920-21, approximately 85 per cent. were actually employed in the different processes of manufacture, or in the sorting and packing of finished articles.

The following statement shows the occupational status of the persons engaged in each class of industry in 1920-21 :—

Class of Industry.	Working Proprietors, Managers, and Overseers.	Clerks, etc.	Engine-drivers, etc.	Workers in Factory, Mill, etc.	Carters, Messengers, and others.	Persons regularly employed at their own homes.	Total.
Treating Raw Material, etc. ...	339	129	150	3,086	136	...	3,840
Oils, Fats, etc. ... ..	73	143	30	1,314	20	4	1,584
Processes in Stone, Clay, Glass, etc.	512	310	291	7,523	192	1	8,829
Working in Wood ... ..	1,075	445	440	6,817	378	2	9,157
Metal Works, Machinery, etc. ...	1,822	1,256	567	33,031	183	1	36,860
Connected with Food, Drink, etc. ...	1,205	1,299	774	14,169	425	2	17,874
Clothing, Textile Fabrics, etc. ...	1,710	567	43	25,434	118	426	28,298
Books, Paper, Printing, etc. ...	880	876	24	8,609	137	1	10,527
Musical Instruments ... ..	35	58	2	544	2	1	642
Arms and Explosives ... ..	18	45	4	771	12	...	850
Vehicles and Fittings, Saddlery, etc.	668	341	13	4,194	48	3	5,267
Ship and Boat Building, etc. ...	129	277	51	4,688	29	1	5,175
Furniture, Bedding, and Upholstery	446	106	13	3,697	31	19	4,312
Drugs, Chemicals, and By-products	207	298	38	2,058	57	1	2,659
Surgical and other Scientific Instruments.	20	22	...	160	4	...	206
Jewellery, Timepieces, and Plated-ware.	89	60	...	651	25	3	828
Heat, Light, and Power ... ..	372	273	615	3,700	78	...	5,038
Leatherware, N.E.I. ... ..	63	79	...	771	5	1	919
Minor Wares, N.E.I. ... ..	164	70	7	1,883	17	5	2,146
Total ... ..	9,827	6,654	3,062	123,100	1,897	471	145,011
Males ... ..	9,130	4,520	3,062	93,498	1,888	89	112,187
Females ... ..	697	2,134	...	29,602	9	382	32,824

The status of workers employed varied greatly in the nineteen standard classes of manufacturing industry. The average proportion per cent. of working proprietors, managers, and overseers, was 6·8 for all classes, but it varied from 2·1 in industries making arms and explosives, to 12·7 in those making vehicles, fittings, saddlery, and harness.

The workers actually employed in mill, workshop, and factory, represented about 85 per cent. of the total number engaged, and nearly 76 per cent. were males.

Only 4·6 per cent. of the employees were clerical workers, and of these nearly one-half were females. The practice of giving out work at piece rates is very limited. Workers employed in their own homes represented only 0·3 per cent. of the total number employed, and were almost entirely women engaged by clothing factories.

#### PROGRESS OF MANUFACTORIES.

The following statement shows the general progress of manufactories: inclusive of those connected with milk products, the value of production, and the amount paid in wages during the period 1901 to 1921:—

Year.	Value of—					Salaries and Wages paid, exclusive of Drawings of Working Proprietors.	Balance (Output, less Materials and Wages).
	Materials Used.	Fuel Consumed, including Motive-power Rented.	Goods Manufactured, or Work Done.	Production, being Value added to Raw Materials.	Production per Employee.		
	£	£	£	£	£	£	£
1901	15,140,896	496,715	25,648,471	10,010,860	151·2	4,952,000	5,058,860
1906	22,102,685	609,998	34,796,169	12,083,486	155·3	5,591,888	6,491,598
1911	33,670,951	1,242,613	54,346,011	19,432,447	178·9	10,047,662	9,384,785
1912	37,122,441	1,360,141	61,163,328	22,680,746	196·5	11,592,052	11,088,694
1913	40,537,476	1,371,425	65,672,495	23,763,594	197·5	12,683,884	11,080,210
1914-15	42,559,370	1,364,186	68,253,332	24,329,776	209·0	12,667,721	11,662,055
1915-16	44,227,079	1,528,220	70,989,864	25,234,565	216·6	13,413,845	11,820,720
1916-17	57,044,667	1,766,664	85,944,320	27,132,980	229·7	14,381,309	12,751,680
1917-18	64,618,261	2,060,076	96,178,191	29,499,854	244·4	14,701,255	14,798,599
1918-19	69,737,452	2,298,041	104,803,018	32,767,525	256·2	16,957,919	15,809,606
1919-20	81,188,497	2,710,666	123,213,480	39,314,317	271·8	21,681,196	17,633,121
1920-21	91,104,505	3,008,744	137,841,386	43,128,137	297·4	25,618,591	17,569,546

The value of the output has grown from £25,648,000 in 1901 to £137,841,000 in 1921, and the value of production from £10,011,000 to £43,128,000.

#### INDIVIDUAL INDUSTRIES.

The information already given in this section relates only to the manufacturing industry as a whole or to groups of industries, and although it serves to show the general development of the industry, it does not furnish particulars relating to individual industries. It is desirable that detailed information should be available for all the important industries, but the output of many of them, *e.g.*, engineering works, is not readily classifiable, and as the output is perhaps the most interesting item, it has been deemed advisable in the following pages to confine the remarks to industries whose importance merits special mention, and whose output may be shown in detail with regard to both quantity and value.

## TANNERIES.

Although skins and hides are still exported for treatment in large quantities, the tanning industry is steadily extending its operations, and, besides maintaining an extensive export trade in leather, provides practically all the raw material needed for local requirements and for a growing oversea trade in footwear and other leather goods. Two-thirds of the leather produced locally is sole leather, but the production of the finer sorts is receiving increasing attention.

Two-thirds of the number of tanneries in operation in the State are situated within the boundaries of the Metropolitan area.

The following table gives particulars of the industry for the year 1901 and at intervals thereafter :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	108	76	72	77	80
Number of Employees ...	1,059	1,039	942	1,351	1,242
Average Horse-power used ...	711	1,044	1,269	2,389	2,688
Value of Land and Buildings † £	115,752	105,990	124,413	214,335	265,166
Value of Plant and Machinery £	47,274	82,241	89,010	140,468	172,132
Total Amount of Wages paid £	80,757	104,695	102,116	256,033	262,724
Value of Fuel ...	£ 4,893	7,160	6,469	17,601	17,855
Value of Materials used ...	£ 578,164	786,817	865,021	2,907,835	1,684,791
Value of Output ...	£ 735,231	982,023	1,060,049	3,548,164	2,103,525
Value of Production ...	£ 152,174	188,046	188,559	622,728	400,879
Materials Treated—					
Hides—					
Calf and Yearling ... No.	*	214,681	130,445	102,630	100,829
Other ... No.	*	317,025	323,297	647,236	692,335
Hide-pieces ... cwt.	*	2,537	4,050	4,200	2,000
Sheep Pelts ... No.	*	4,642,865	3,693,515	5,213,242	3,813,618
Other Skins ... No.	*	125,576	148,121	560,304	284,632
Bark ... tons	*	11,706	9,633	13,301	11,570
Articles Produced—					
Leather ... lb.	*	13,945,005	12,724,000	19,582,910	17,707,065
Basils ... lb.	*	4,324,139	3,821,434	3,619,644	2,730,162
Pelts, pickled ... No.	*	357,833	355,938	1,365,450	690,084
Other Skins, selling value £	*	17,151	33,075	377,061	255,535
Fleshings ... cwt	*	*	*	31,363	64,467

\* Not available.

† Includes rented premises.

## WOOL-SCOURING AND FELLMONGERING.

The wool-scouring and fellmongering industry has made rapid progress during recent years, but it is probable that much greater development will take place in the near future, particularly in wool-scouring. As will be seen from the following table, the quantity of wool treated in 1919-20 was approximately twice as large as in 1913. The heavy decline in the year 1920-21 was due to the stagnant condition of the wool trade generally.

Although less wool was treated in 1920-21 than in 1913, in the two preceding years the quantity was twice as great.

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	73	59	62	4 <sup>s</sup>	42
Number of Employees ...	1,459	1,603	1,553	1,775	1,461
Average Horse-power used ...	997	2,009	2,436	3,608	3,623
Value of Land and Buildings † £	125,836	169,418	156,277	246,327	276,320
Value of Plant and Machinery £	66,391	169,200	183,388	346,559	373,442
Total amount of Wages paid £	77,429	126,215	147,268	347,408	280,731
Value of Fuel... .. £	9,059	16,277	19,079	44,070	39,542
Value of Materials used ...	£ 25,244	2,151,713	2,496,029	5,514,302	2,991,868
Value of Output ...	£ 150,614	2,393,883	2,808,198	6,880,468	3,677,014
Value of Production ...	£ 116,311	225,893	293,090	1,295,096	645,604
<b>Materials Treated—</b>					
Greasy Wool ... .. lb.	*	34,023,054	31,241,578	50,686,825	24,960,202
Scoured Wool ... .. lb.	*	*	*	5,214,750	5,738,701
Skins ... .. No.	*	5,180,335	4,930,409	6,684,037	4,088,690
<b>Articles Produced—</b>					
Scoured Wool ... .. lb.	*	33,283,378	31,677,852	42,941,898	25,515,850
Wool-tops and Noils ... lb.	*	*	*	5,119,905	5,623,414
Pelts... .. No.	*	4,655,524	4,397,680	4,445,608	3,235,429

\* Not available.

† Includes rented premises.

#### SOAP AND CANDLE FACTORIES.

Of the industries in which oils and fats are treated, soap and candle making is by far the most important. The industry has grown to such an extent that it supplies practically the whole of the local requirements of soap and candles, except fancy and medicated soaps, besides maintaining a small export trade with the islands of the Pacific. The following table exhibits the chief particulars of the industry since 1901 :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	44	37	31	25	26
Number of Employees ...	533	638	725	1,017	946
Average Horse-power used ...	503	785	764	890	964
Value of Land and Buildings† £	84,923	165,218	170,800	223,120	223,423
Value of Plant and Machinery £	89,147	150,453	170,995	253,870	287,714
Total amount of Wages paid £	37,681	49,555	59,117	131,383	141,135
Value of Fuel ... .. £	5,932	12,205	11,081	37,188	40,160
Value of Materials used ... .. £	208,676	359,096	406,113	1,076,868	859,555
Value of Output ... .. £	322,036	597,544	610,175	1,476,959	1,177,511
Value of Production ... .. £	107,428	226,243	192,981	362,903	277,796
Materials Treated—					
Tallow ... .. cwt.	*	117,428	143,593	147,490	139,153
Alkali ... .. lb.	*	6,370,007	6,623,006	5,528,630	4,516,054
Wax ... .. lb.	*	£	£	2,888,238	2,481,854
Resin ... .. cwt.	*	180,697	203,957	28,258	22,327
Copra Oil ... .. cwt.	*			21,705	15,560
Sand ... .. cwt.	*			18,736	3,595
Articles Produced—					
Soap ... .. cwt.	233,600	277,449	278,899	348,093	280,620
Soap Extract, Powders, &c. lb.	*	965,807	1,873,403	4,376,710	4,051,251
Candles (including wax) lb.	3,895,468	5,388,848	5,563,404	4,942,142	4,191,534
Glycerine ... .. lb.	631,650	*	*	2,110,891	1,882,423
Soda Crystals ... .. £	*	14,014	19,153	6,686	3,456
Oleine ... .. £	*	*	*	36,941	26,714
Stearine ... .. £	*	*	*	25,880	25,500

\* Not available,

† Includes rented premises.

It should be noted that the alkali used and the soda crystals produced in factories other than those making soap and candles are included in the figures shown above for the years 1911 and 1913.

## BRICKWORKS.

Brickworks employ approximately equal numbers of persons in the Metropolitan district and in the remainder of the State, but the output of the Metropolitan kilns is much greater and more varied. The following figures present detailed information concerning the industry in 1901 and later years :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	182	222	217	161	159
Number of Employees ...	1,823	3,017	3,665	3,774	3,716
Average Horse-power used :	1,228	4,865	7,677	8,532	9,181
Value of Land & Buildings† £	200,170	391,875	49,350	728,255	865,182
Value of Plant & Machinery £	108,589	449,100	666,470	972,288	1,114,500
Total Amount Wages paid £	149,342	322,781	428,106	633,670	777,536
Value of Fuel ... £	46,355	101,267	125,342	208,281	276,402
Value of Materials used £	32,199	70,881	83,653	134,219	189,150
Value of Output ... £	364,251	726,620	872,322	1,368,726	1,640,743
Value of Production ... £	285,697	554,472	663,327	1,026,226	1,175,191
Articles Produced—					
Bricks ... .. No.	157,999,000	327,864,000	389,435,000	339,579,089	360,092,005
Tiles ... .. £	*	24,857	27,422	252,342	286,862
Pipes ... .. £	*	52,241	67,593	5,916	6,754
Pottery ... .. £	*	51,763	48,407	...	...
Hollow Building Blocks £	*	3,864	3,940	891	4,159
Fire Bricks, &c. ... £	*	*	*	71,837	72,225

\* Not available.

† Includes rented premises.

Owing to the partial suspension of building operations during the war years there was a much smaller demand for bricks; but with the resumption of building operations the output improved considerably during the last three years. A number of establishments, chiefly in the Metropolitan district, also make tiles, pottery, etc., and the manufacture of roofing tiles has developed to such an extent that practically all the tiles now used in the State are of local production.

*State Brickworks, Homebush.*

In the latter part of 1911 the Government established State Brickworks at Homebush, near Sydney, where a considerable area of suitable clay had been found.

The business results of the past and previous years are regarded as highly satisfactory, the undertaking having been enabled to repay £20,000 on account of capital expended, and to set apart £20,000 for purposes of renewals, replacements, and new works. Besides supplying the requirements of the different Government Departments at a much reduced cost, the State Brickworks sell bricks to the public at prices below those ruling outside. The sale prices given were for bricks loaded into trucks, and at the yard, Homebush Bay.



The following table gives particulars of the State Brickworks at Homebush Bay since 1916 :—

Particulars.	1916.	1917.	1918.	1919.	1920.	1921.
Number of Bricks manufactured	38,137,384	29,720,259	28,936,715	25,439,664	37,367,209	38,586,954
Used for Public Works .. ..	35,287,615	22,255,645	13,912,968	20,896,882	17,722,953	19,306,494
Sold to Private Purchasers ..	2,828,262	6,127,621	15,879,945	14,863,730	19,492,205	19,230,679
Stocks at 30th June .. ..	282,521	1,472,876	588,397	257,067	373,278	402,179
Balance used at Works .. ..	60,303	146,638	28,281	10,402	35,840	20,880
Cost of Manufacture per 1,000 ..	£ s. d. 1 5 4	£ s. d. 1 12 1	£ s. d. 1 14 5	£ s. d. 1 14 9	£ s. d. 2 0 0	£ s. d. 2 5 7
Sale price per 1,000—						
Seconds .. .. .	1 10 0	1 15 0	1 15 0	1 18 6	2 7 6	2 12 6
Commons .. .. .	1 15 0	1 17 6	1 17 6	2 1 0	2 10 0	2 15 0
Face.. .. .	3 0 0	3 5 0	3 5 0	3 10 0	4 3 0	4 8 0

#### SAWMILLS.

Sawmilling is an important industry both in the Metropolitan and country districts.

Sawmills are classified as Metropolitan, country town, and forest. To the first category belong only about one-twelfth of the total number, to the second about three-eighths, and to the last somewhat more than a half, of which the great majority are in the country division. Besides general sawmilling, some mills undertake moulding and planing, and the cutting of wood-paving blocks. In the more important centres sawmills are associated with yards dealing with imported timbers and joinery.

Details concerning the sawmilling industry at intervals since 1901 are as follow :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	345	452	477	477	496
Number of Employees ...	4,088	5,205	5,788	5,660	5,645
Average Horse-power used...	5,189	10,280	12,521	13,226	14,597
Value of Land and Buildings * ... ..	£ 317,193	465,548	553,102	633,667	811,830
Value of Plant and Machinery ... ..	£ 273,883	526,909	619,264	828,449	908,192
Total Amount of Wages Paid ... ..	£ 304,826	456,520	589,736	723,707	926,276
Value of Fuel .. ..	£ 17,601	6,503	9,230	23,712	24,405
Value of Materials used ..	£ 824,065	1,309,549	1,668,221	2,353,240	2,732,656
Value of Output ... ..	£ 1,336,153	2,057,807	2,517,103	3,554,794	4,103,924
Value of Production. ..	£ 494,487	741,755	839,652	1,177,842	1,346,863
Materials Treated—					
Logs—					
Hardwood sup. ft. ..	213,228,000	147,706,000	185,441,000	172,789,300	178,133,002
Softwood .. ..		65,301,000	73,589,000	66,088,800	67,823,577
Articles Produced—					
Sawn Timber—					
Hardwood sup. ft. ..	180,028,000	100,079,000	126,369,000	115,565,400	117,781,837
Softwood .. ..		51,392,000	54,335,000	45,061,600	45,628,945

\* Includes rented premises.

## METAL WORKS, MACHINERY, ETC.

The industries included in this class are by far the most important to the industrial workers in the State, although the clothing trade employs a greater number of persons, of which number, however, nearly 73 per cent. are females.

Though the output of these works constitutes a considerable proportion of the total value of local manufactures, they provide but a very small part of the local requirements of manufactured metals and machinery.

Details of the production of these industries are not available, but in view of their great importance the following particulars relating to their operations in 1920-21 are included :—

Items.	Engineer- ing Works.	Ironworks and Foundries.	Railway and Tramway Workshops.	Smelting.	Other.	Total.
Number of Establishments ...	255	118	35	23	286	717
Number of Employees ...	9,189	5,790	9,837	4,279	7,765	36,860
Average Horse-power used ...	7,209	22,618	6,448	24,533	9,296	70,104
Value of Land and Buildings* £	1,411,437	684,697	1,186,774	613,291	1,445,509	5,341,708
Value of Plant and Machinery £	1,320,417	2,115,009	1,290,063	2,762,743	1,288,206	8,776,438
Total amount of Wages paid £	1,860,326	1,315,199	2,337,694	901,081	1,366,146	7,780,446
Value of Fuel ... £	74,957	256,441	40,849	998,164	85,510	1,455,921
Value of Materials used ... £	2,198,310	7,129,003	1,628,203	5,626,580	3,979,912	20,562,008
Value of Output ... £	4,803,026	9,121,472	4,008,713	8,469,449	6,241,146	32,643,806
Value of Production ... £	2,529,759	1,736,028	2,339,661	1,844,705	2,175,724	10,625,877

\* Includes rented premises.

## IRON AND STEEL WORKS.

New South Wales is fortunate in having large supplies of iron ore and coal, both of excellent quality, and in close proximity to each other and to the seaboard.

As early as 1848 an attempt was made to produce pig-iron at Mittagong, where a blast furnace and rolling mills were erected, but the works were closed in 1855.

In 1875 a blast furnace was erected at Lithgow. Three years later it was producing about 100 tons of pig-iron per week from local ores. The production of pig-iron ceased in 1882, but the works continued to re-roll worn rails into smaller sections.

In 1905 contracts were made by the Government with William Sandford & Company for the supply of iron and steel for the use of State undertakings for a period of seven years. A modern blast furnace and steel furnaces were added to the existing plant at Lithgow, and the first cast of pig-iron in the new furnace was made on the 30th April, 1907. The weekly output was from 500 to 700 tons of pig-iron. Subsequently the company disposed of its interests to Messrs. G. and C. Hoskins, with whom the Government made a contract for the supply of iron and steel for a period of nine years, dating from 1st January, 1908. The Lithgow works were immediately reorganised, and by the beginning of 1909 the old rolling-mills had been

remodelled, new high-pressure steam pipes installed, and new boilers and heating furnaces added. The ore used in these works is obtained from mines at Tallewang, Coombing Park (near Carcoar), Breadalbane, and Cadia.

The Broken Hill Proprietary Company Limited completed and opened extensive iron and steel works at Newcastle in June, 1915.

The works are situated on the water frontage at Port Waratah, with extensive wharf accommodation, approximately 1,800 feet in length, with full railway facilities.

The blast furnace plant consists of four furnaces, two with a nominal daily capacity of 450 tons, one of 500 tons, and a foundry furnace of 100 tons or with an approximate annual capacity of about 460,000 tons of irons.

The steel plant consists of seven basic open hearth furnaces with an output capacity of approximately 300,000 tons of steel ingots per annum.

The rolling mill plant consists of a 36-inch blooming mill, 28-inch rail and structural mill, also 18-inch, 12-inch, and 8-inch mills for light structural material and merchant bars. There are also fishplate and rod mills, the latter for producing rods for wire drawing, with a capacity of 100,000 tons per annum.

The steel and iron foundry is equipped with an acid open hearth steel furnace of 25 tons capacity, and castings up to 40 tons in weight have been made.

The ore used is obtained from the company's quarries at "Iron Knob" in South Australia.

The coke required for the furnaces is produced by the company's own coke oven by-product plant. The by-products recovered are :—Tar, sulphate of ammonia, and benzol.

Allied to and adjoining the steel works are the plants of John Lysaght Limited, for the production of galvanised iron and black steel sheets, which commenced operations on the 4th April, 1921, and the works of Ryland Bros. Limited, manufacturing wire and wire netting.

The following table shows the production of pig-iron in New South Wales in each year from 1907 to 1921 :—

Year.	From New South Wales Ores.	From Other Australian Ores.	Total.	Year.	From New South Wales Ores.	From Other Australian Ores.	Total.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
1907	18,631	...	18,631	1915	76,318	66,662	142,980
1908	30,393	...	30,393	1916	52,556	74,035	126,591
1909	26,762	...	26,762	1917	45,025	102,394	147,419
1910	40,487	...	40,487	1918	68,072	138,873	206,945
1911	36,354	...	36,354	1919	80,941	152,754	233,695
1912	32,677	...	32,677	1920	94,384	251,416	345,800
1913	46,563	...	46,563	1921	99,790	266,759	366,549
1914	75,150	...	75,150				

The increase in the use of other Australian ores in New South Wales is due to the operations of the Broken Hill Proprietary Company at Newcastle, the ores used being brought from South Australia.

The quantity of iron ore used in 1921 for the production of pig-iron was 540,169 tons, of which 180,972 tons were mined in New South Wales.

The particulars relating to the production of steel in 1920 and 1921 are as follows :—

				1920.	1921.
				tons.	tons.
Steel	...	...	...	42,032	50,151
„ Rails	...	...	...	54,170	41,353
„ Bars and Sections	...	...	...	133,373	102,291
„ Plates	...	...	...	4,417	1,865
„ Billets	...	...	...	34,471	36,014

### Smelting.

Smelting, as a distinct industry, is carried on in several centres in New South Wales, the most important works being at Cockle Creek, Boolaroo, in the Newcastle district, and at Port Kembla in the South Coast. At Cockle Creek portion of the Broken Hill ores are treated, as well as ores from mines in other parts of the State; but a large portion of the ores from the Barrier mines is treated in South Australia.

The smelting and treatment of ores occupied twenty-three plants or establishments, of which three were in the Metropolitan division.

The following statement shows the operations of New South Wales smelting companies in connection with both local and imported ores during 1920-21 :—

Metal.	Quantities of Metals extracted from Ores, Concentrates, &c., the produce of—								
	N.S.W.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	N. Territory.	Papua.	New Zealand.
Silver ... .. oz.	1,091,756	54,877	193,750	1,560	17,267	419,474	...	9	9,465
Lead ... .. tons	10,434	1	225	15	...	1,962	...	...	...
Copper ... .. „	960	6	14,027	8	318	5,013	...	1	1
Tin ... .. „	1,157	...	180	...	62	...	9	...	...
Iron—Pig ... .. „	99,790	...	...	266,759	...	...	...	...	...
Antimony ... .. „	50	...	...	...	...	...	...	...	...
Ferro-Manganese .. „	876	...	...	...	...	...	...	...	...

### BUTTER FACTORIES.

Of the many industries engaged in the preparation of articles of food few are more important than butter-making, which gives employment to over 1,000 persons, and has an annual output valued at £8,975,000. A very important export trade in butter has grown up within the last twenty years. More than 90 per cent. of the butter produced within the State is made in factories.

Details concerning butter factories for the year 1901 and other years, including 1920-21, are as follow:—

Items.	1901.	1911.	1913.	1919-1920.	1920-1921.
Number of Establishments ...	130	150	140	120	126
Number of Employees ...	909	968	898	917	1,022
Average Horse-power used...	1,765	2,161	2,578	3,332	3,843
Value of Land and Buildings † ...	£ 247,394	186,893	174,114	254,630	308,189
Value of Plant and Machinery ...	£ 172,767	230,485	240,133	323,055	395,668
Total Amount of Wages paid... ..	£ 74,176	110,617	123,401	178,432	225,392
Value of Fuel... ..	£ 13,924	23,599	24,807	46,965	61,655
Value of Materials used	£ 1,260,920	3,205,863	3,035,041	4,669,340	8,017,379
Value of Output ...	£ 1,535,398	3,475,890	3,324,377	5,361,815	8,974,967
Value of Production...	£ 260,554	246,428	264,529	645,510	895,933
Materials Treated—					
Milk ... .. gals.	*	1,019,151	580,749	9,452	145,084
Cream ... .. lb.	*	176,402,048	63,262,439	134,460,340	174,694,907
Articles Produced—					
Butter ... .. lb.	34,282,214	78,421,512	73,245,383	59,636,489	79,864,745

\* Not available.

† Includes rented premises.

In addition to these factories, which are extensively engaged in making butter, there are a number of other factories also engaged in connection with dairy produce.

Particulars relating to all factories dealing with dairy products are given in the following table:—

Year.	Factories.							Estimated Value of Plant and Machinery.	Machinery in use.						Persons Employed.	
	Butter only.	Cream and Milk.	Cheese only.	Bacon and Hams only.	Butter and Cheese.	Condensed Milk.	Total.		Engines.		Butter Workers.	Churns.	Cream Separators.	Cheese Presses.	Males.	Females.
									Number.	Horse-power.						
							£				No.	No.	No.	No.		
1916-17	124	846	60	21	5	4	1,060	506,968	1,205	7,946	73	238	914	143	2,167	49
1917-18	118	961	59	22	6	4	1,170	568,757	1,353	8,294	57	227	989	131	2,374	59
1918-19	120	927	58	23	8	4	1,140	537,291	1,344	8,309	46	224	1,003	149	2,349	66
1919-20	113	970	52	22	8	4	1,174	570,051	1,331	8,693	45	217	1,027	128	2,436	72
1920-21	124	1,006	49	18	5	4	1,206	649,858	1,264	9,332	38	224	1,031	136	1,459	72

The number of persons employed in 1920-21 is exclusive of 1,000 males who were employed partly in butter making and partly in farm work.

Bacon, hams, butter, and cheese are made largely also on farms; the special chapter in this Year Book dealing with the Dairying Industry should, therefore, be consulted for complete information regarding these branches of agricultural and manufacturing production.

#### MEAT-PRESERVING AND REFRIGERATING.

In 1919-20 there were nine establishments with 1,109 persons employed in connection with meat-preserving, including one establishment in the country division, which was a rabbit cannery, but owing to depression in the

meat trade only three of these establishments, employing 143 persons, were in operation in 1920-21. The following table shows the number of carcasses treated in establishments dealing with meat by canning and chilling at intervals since 1901 :—

Year.	Meat-preserving Works.				Refrigerating Works.	
	Cattle.	Sheep and Lambs.	Meat and Tongues and Sundries.		Cattle.	Sheep and Lambs.
			Quantity.	Value.		
	No.	No.	lb.	£	No.	No.
1901	16,538	732,094	*	*	18,195	963,614
1906	9,995	274,950	*	*	5,352	1,283,862
1911	61,596	925,475	3,023,931	31,978	10,188	1,469,923
1912	50,941	616,435	2,301,418	37,079	11,552	1,191,711
1913	100,827	374,523	7,305,113	81,807	29,887	2,160,484
1918-19	41,517	648,435	9,989,757	240,819	32,337	583,695
1919-20	44,828	449,533	9,821,595	191,841	50,218	1,419,569
1920-21	4,740	13,988	2,429,345	25,811	34,147	491,198

\* Not available.

The total output in 1920-21 was valued at £111,477, the principal item being tinned meat, 1,751,055 lb., valued at £74,747.

The operations of these works are affected by a number of factors, most important of which are the seasons and the condition of world-markets. In adverse seasons, or in a succession of good seasons, such stock as are fat are usually hastened to market, while, on the breaking of a drought, stock are withheld for fattening or breeding. An unusually severe drought broke in June, 1920, and for a time stock were withheld, the meat markets of the world were glutted, and remunerative prices could not be obtained; consequently, operations in 1920-21 were much restricted.

The detailed figures relating to the freezing and chilling of carcase meat at refrigerating works during the year 1920-21 were as follow :—

Live Stock Treated.				Frozen for Export.	Chilled.	Total.
				No.	No.	No.
Bullocks and Cows	...	...	...	27,044	5,902	32,946
Calves	...	...	...	458	743	1,201
Total	...	...	...	27,502	6,645	34,147
Sheep	...	...	...	177,446	70,456	247,902
Lambs	...	...	...	241,187	2,109	243,296
Total	...	...	...	418,633	72,565	491,198
Pigs	...	...	...	1,941	1,012	2,953
Total Carcases	...	...	...	448,076	80,222	528,298

## BISCUIT FACTORIES.

There are in the State ten establishments engaged in the manufacture of biscuits, seven of which are within the Metropolitan area. The industry has made rapid progress, and the value of the annual output now exceeds £1,350,000. A growing export trade in biscuits is maintained with the islands of the Pacific. Details for 1901 and other years, including 1920-21, are given below:—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	8	6	7	9	10
Number of Employees ...	845	1,360	1,594	1,904	1,800
Average Horse-power used ...	131	556	1,017	1,311	1,115
Value of Land and Buildings† £	42,253	94,050	111,886	134,182	164,031
Value of Plant and Machinery £	29,066	86,192	107,720	119,390	135,285
Total Amount of Wages paid £	35,165	70,055	88,358	189,187	221,791
Value of Fuel ...	£ 1,862	7,104	9,731	21,970	23,614
Value of Materials used... £	126,891	332,341	426,135	817,128	936,747
Value of Output ...	£ 213,645	529,108	665,226	1,246,915	1,358,266
Value of Production ...	£ 84,892	189,653	229,360	407,817	397,905
Materials Treated—		8,755		12,890	12,210
Flour... .. tons	*	*	10,654	2,975	3,024
Sugar ... .. tons	*	*	*	430,980	446,788
Other—Value only ...	£	*	*		
Articles Produced—					
Biscuits ... .. lb.	*	22,029,000	27,606,000	44,081,100	38,308,360
Cakes—Value only ...	£	*	*	23,350	21,916
Other— „ „ „	£	*	*	35,850	34,843

\* Not available.

† Includes rented premises.

## FLOUR-MILLS.

The amount of mill-power for grinding and dressing grain is ample for treating the flour consumed in the State, and in favourable seasons there is a considerable export trade. In 1920-21 only one-fourteenth part of the breadstuffs exported had been milled; this included about 36,400 tons of flour.

Details concerning flour-milling at intervals since 1901 are as follow:—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ..	89	73	68	58	60
Number of Employees ...	889	967	1,035	1,129	1,023
Average Horse-power used ...	3,149	4,670	4,708	5,845	6,334
Value of Land and Buildings† £	334,037	357,356	369,664	470,638	561,688
Value of Plant and Machinery £	254,335	340,316	342,367	471,536	572,456
Total Amount of Wages paid £	77,321	123,491	137,514	223,236	219,964
Value of Fuel ...	£ 18,977	24,648	25,455	46,185	37,746
Value of Materials used... £	1,215,420	2,211,263	2,530,840	5,149,602	4,951,650
Value of Output ...	£ 1,514,512	2,538,331	2,957,947	5,973,792	5,590,405
Value of Production ...	£ 280,115	302,420	401,652	778,005	601,009
Materials Treated—					
Wheat ... .. bus.	9,369,534	12,616,111	13,963,806	16,920,856	11,595,807
Articles Produced—					
Flour ... .. tons	191,504	253,556	285,425	348,691	244,818
Bran ... .. „	*	65,182	69,855	76,015	50,104
Pollard ... .. „	*	45,276	52,739	71,570	48,338
Sharps and Screenings „	*	2,308	3,508	4,517	2,103
Wheat Meal, etc. ... cwt.	*	21,840	33,900	28,630	21,863

\* Not available.

† Includes rented premises.

## SUGAR-MILLS.

The manufacture of sugar has been an important industry for half a century. So far back as 1878 there were 50 small mills in the State, but there are now only 3 larger mills, and employment is afforded to a smaller number of persons than were engaged ten years ago.

The reason for the decline in the manufacture of sugar is to be found in the decrease of the area under sugar-cane in New South Wales. The cultivation of sugar-cane is confined practically to the Richmond, the Tweed, the Brunswick, and the Clarence Rivers, and the area farmed is diminishing yearly, as other more profitable crops can be grown. Queensland is the great sugar centre of Australia, on account of its immunity from the frosts, which retard the cultivation of the cane in higher latitudes.

The raw sugar manufactured in 1920-21 was valued at £473,734, and the molasses at £2,671.

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	4	4	3	3	3
Number of Employees ...	529	469	486	419	437
Average Horse-power used ...	2,578	3,000	2,750	2,273	1,279
Value of Land and Buildings £	12,177	52,480	54,000	105,908	106,070
Value of Plant and Machinery £	509,242	467,976	470,183	423,632	425,283
Total Amount of Wages paid £	31,764	38,004	51,476	42,743	63,003
Value of Fuel ... £	4,854	8,102	5,280	5,263	8,636
Value of Materials used £	95,394	107,600	208,899	163,858	303,651
Value of Output ... £	197,137	206,277	354,742	238,414	476,405
Value of Production ... £	96,889	90,575	140,563	69,293	164,118
Materials Treated—					
Cane crushed ... tons	131,083	147,799	185,910	91,321	131,313
Articles produced—					
Raw Sugar ... cwt.	296,200	345,978	443,840	216,740	302,480
Molasses ... gals.	1,072,400	796,440	966,000	494,600	649,800

*Sugar Refinery.*

There is but one sugar refinery in the State and it treats both local and imported raw product. During the year 1920-21 it handled 2,319,520 cwt. of raw sugar, which gave an output of 2,250,360 cwt. of the refined article, valued at £5,221,828.

The three mills, which were situated respectively at Harwood Island, on the Clarence River, at Broadwater, on the Richmond, and at Condong, on the Tweed, together with the refinery at Pyrmont, Sydney, during the year 1920-21 furnished employment to 1,127 persons.



## BREWERIES.

There were in the State 17 establishments classed as breweries, of which 3, the largest and most important, were within Metropolitan boundaries. In 1911 there were 37 breweries in New South Wales, but though the number has decreased, the output is steadily increasing.

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	51	37	31	17	17
Number of Employees ...	1,016	912	1,043	1,100	1,122
Average Horse-power used ...	1,105	1,035	1,593	3,192	3,289
Value of Land and Buildings* £	584,754	305,287	323,302	693,127	714,155
Value of Plant and Machinery £	190,710	281,316	382,290	832,705	924,181
Total Amount of Wages paid £	119,099	120,540	159,227	256,692	286,685
Value of Fuel ...	£ 13,849	17,794	23,232	56,010	66,848
Value of Materials used... £	282,128	494,219	671,157	1,082,456	1,316,561
Value of Output... £	1,022,247	1,140,151	1,423,586	2,373,895	2,515,224
Value of Production ... £	726,270	628,138	729,197	1,235,429	1,131,815
Materials Treated—					
Malt ... .. bshls.	532,930	667,457	809,171	872,452	811,385
Hops ... .. lb.	665,345	790,866	909,116	906,944	817,493
Sugar ... .. tons	3,927	4,421	5,218	5,731	5,436
Other Materials ... cents	...	7,705	9,404	706	171
Articles produced—					
Ale, Beer, Stout ... gals.	13,973,751	19,804,540	24,212,202	28,955,975	26,775,368

\* Includes rented premises.

## TOBACCO FACTORIES.

Sixteen factories under this classification were in operation during the year 1920-21, all situated within the Metropolitan area. Of these, 10 were engaged in the manufacture of cigars, 4 in that of tobacco, and 2 in that of cigarettes.

About a tenth of the tobacco manufactured in New South Wales is grown in the State. In 1920-21 tobacco was grown on 1,021 acres, and the year's crop was 7,749 cwt., valued at £63,700.

Large quantities of manufactured tobacco and cigarettes are exported, but a considerable proportion of this export is not manufactured within the State.

The following table shows details of the operations of tobacco factories in New South Wales at intervals since 1901 :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	20	26	24	16	16
Number of Employees ...	1,061	1,462	1,497	2,400	2,394
Average Horse-power used ...	151	630	602	667	657
Value of Land and Buildings* £	155,452	182,569	154,748	242,346	291,604
Value of Plant and Machinery £	69,124	92,138	100,298	183,462	226,043
Total Amount of Wages paid £	55,149	131,323	149,129	331,324	356,781
Value of Fuel ...	£ 1,288	1,067	919	10,608	11,697
Value of Materials used ...	£ 389,148	776,302	910,713	2,948,948	3,403,517
Value of Output ...	£ 561,991	1,250,748	1,379,048	3,822,181	4,240,746
Value of Production ...	£ 171,555	473,379	467,416	862,625	825,532
Materials Treated—					
Australian Leaf ... lb.	883,615	745,405	727,759	861,002	882,822
Imported Leaf ... ..	2,114,456	4,617,756	5,085,083	9,378,051	9,555,274
Articles produced—					
Tobacco ... .. lb.	2,524,231	3,996,471	3,885,562	6,885,972	6,723,576
Cigars ... ..	67,128	87,818	86,264	160,717	146,503
Cigarettes ... ..	457,276	1,899,462	2,526,130	4,498,359	5,072,883

\* Includes rented premises.

## WOOLLEN AND TWEED MILLS.

Although New South Wales is one of the greatest wool-producing countries in the world those engaged in the manufacture of woollen materials numbered only 1,650 in 1920-21, which was 189 more than in 1919-20. Woollen mills were amongst the earliest established in the State, but the industry progressed very slowly until the outbreak of war. As yet, only a very small proportion of the woollen goods required in the State is manufactured locally.

The output of local tweed, however, is now nearly twice as great as in 1913, and the production of other articles also shows considerable increases.

Details of employment, output, and other items, at intervals since 1901, are shown in the following table :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	4	5	5	7	9
Number of Employees ...	234	738	776	1,461	1,650
Average Horse-power used ...	255	937	1,549	2,900	2,795
Value of Land and Buildings† £	29,780	96,821	117,274	190,113	224,474
Value of Plant and Machinery £	26,650	122,927	170,693	338,098	384,662
Total amount of Wages paid £	12,459	66,536	71,852	176,204	235,668
Value of Fuel ...	£ 1,727	4,632	5,672	16,965	23,517
Value of Materials used	£ 30,272	143,915	156,364	580,694	745,848
Value of Output ...	£ 57,039	271,465	289,726	1,003,850	1,437,647
Value of Production ...	£ 25,040	122,918	127,690	406,191	668,282
Materials Treated—					
Scoured Wool ... lb.	685,240	1,225,470	1,242,223	3,527,481	3,603,448
Cotton ... ..	†	†	†	334,547	332,501
Articles produced—					
Tweed and Cloth ... yds.	525,020	1,054,845	1,312,363	2,208,846	2,494,417
Flannel and Blankets	£ *	95,313	62,050	147,852	198,504
Rugs and Shawls ...	£ *			12,500	23,000
Noils ... ..	£ †	†	†	12,978	14,588
Tops ... ..	£ †	†	†	20,306	55,084
Yarn ... ..	£ †	†	†	152,650	278,072

\* 3,428 yards flannel, 5,000 pairs blankets, 800 rugs. † Not available.

† Includes rented premises.

## BOOT AND SHOE FACTORIES.

Practically the whole of the State's requirements in boots and shoes is supplied from local factories, and considerable quantities are exported, principally to New Zealand, South Africa, and Java.

Particulars of the operation of these factories since 1901 are shown in the following table:—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	100	106	105	175	189
Number of Employees ...	3,979	4,411	4,262	5,157	4,845
Average Horse-power used ...	300	855	989	1,530	1,520
Value of Land and Buildings† £	166,413	222,983	237,135	433,269	499,911
Value of Plant and Machinery £	85,571	156,643	158,916	185,313	202,881
Total Amount of Wages paid £	216,869	367,605	382,223	706,267	687,080
Value of Fuel ...	£ 2,978	5,298	5,818	12,045	11,696
Value of Materials used... £	398,309	709,818	754,744	2,047,904	1,557,225
Value of Output... £	692,253	1,221,748	1,284,489	3,101,212	2,701,972
Value of Production ... £	290,966	506,632	543,927	1,041,263	1,133,051
Materials Treated—					
Sole Leather ... lb.	*	5,189,000	4,467,927	5,693,171	5,027,822
Upper ... sq. ft.	*	8,010,000	8,070,590	7,984,912	7,286,382
Articles produced—					
Boots and Shoes ... pairs	2,821,724	3,730,760	3,640,068	3,872,709	3,232,550
Slippers, &c. ... „	512,584	439,428	310,026	508,495	609,401
Uppers, N.E.I. ... „	...	71,133	53,295	40,525	41,925

\* Not available.

† includes rented premises.

In 1920-21 eighty-eight boot-repairing establishments were included; they employed 386 persons, and paid £58,539 in wages: materials to the value of £61,157 were used, including 205,144 lb. of sole leather, and 4,206 square feet of uppers: the output was valued at £161,750.

The number of boot and shoe factories was 101, of which 87 were situated within the Metropolitan area and 14 in the remainder of the State.

#### HAT AND CAP FACTORIES.

There has been considerable expansion in the industry organized for the manufacture of hats and caps, and Australian products are now gaining an important place in local markets as well as in the markets of New Zealand. Until 1898 fewer than 100 persons were employed in the industry, but in 1920-21 there were 1,456, of which number 59 per cent. were females.

There were 28 establishments listed under this classification, of which 1 only was outside the Metropolitan area. Particulars of the operations since 1901 are as follow:—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	10	32	38	28	28
Number of Employees ...	330	1,566	1,545	1,565	1,456
Average Horse-power used ...	21	433	651	787	764
Value of Land and Buildings* £	14,076	108,936	124,396	142,951	174,315
Value of Plant and Machinery £	7,034	60,807	69,396	81,605	88,817
Total Amount of Wages paid £	15,055	96,498	104,879	157,609	185,394
Value of Fuel ...	£ 314	4,376	5,096	7,341	7,574
Value of Materials used... £	28,662	127,494	157,391	352,395	393,372
Value of Output... £	54,698	293,591	355,064	680,655	747,545
Value of Production ... £	25,722	161,721	192,577	300,919	346,599
Hats & Caps Manufactured No.	563,976	2,692,778	3,084,959	2,294,505	2,284,572

\* Includes rented premises.

## ELECTRIC LIGHT AND POWER WORKS.

Few industries have made greater progress than that engaged in the production and supply of electric light and power, and in this branch of industry there exist important municipal undertakings. The development since 1901 is shown clearly by the details given in the next table :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	51	1 4	115	122	117
Number of Employees... ..	245	929	1,118	1,175	1,353
Average Horse-power used ...	3,494	54,734	76,054	93,264	111,591
Value of Land and Buildings† £	49,132	448,972	519,445	1,242,406	1,381,092
Value of Plant and Machinery £	192,842	1,257,173	1,391,007	2,285,830	2,531,358
Total amount of Wages paid £	28,862	134,884	170,745	253,099	327,157
Value of Fuel ... ..	£ 17,166	183,248	219,080	390,042	590,373
Value of Materials used £	21,123	69,484	41,884	81,342	54,995
Value of Output ... ..	£ 87,241	896,607	1,266,801	1,552,764	1,697,763
Value of Production ... ..	£ 48,952	643,875	1,005,837	1,081,380	1,052,395
Materials treated—					
Coal ... .. tons	*	259,239	309,441	383,771	510,088
Articles produced—					
Electric Light ... units	*	20,727,000	27,834,225	43,186,244	53,691,324
Power ... .. units	*	114,610,000	165,873,147	229,617,230	288,844,966

\* Not available.

† Includes rented premises.

## GASWORKS.

Despite the substantial progress that has been made in the installation of electric lighting plants, the use of gas for purposes of illumination, power, and cooking, is also extending continuously, as will be seen in the following table :—

Items.	1901.	1911.	1913.	1919-20.	1920-21.
Number of Establishments ...	38	47	52	46	46
Number of Employees ... ..	650	1,053	1,351	1,560	1,642
Average Horse-power used ...	711	1,394	1,722	2,978	3,125
Value of Land and Buildings† £	459,060	564,387	496,942	985,775	1,066,074
Value of Plant and Machinery £	480,533	888,711	1,112,828	1,802,378	1,892,835
Total amount of Wages paid £	80,654	154,426	194,683	329,634	437,318
Value of Fuel ... ..	£ 18,000	57,372	69,081	111,211	112,995
Value of Materials used £	123,440	277,861	305,592	680,818	829,906
Value of Output... ..	£ 583,815	910,972	1,035,257	2,006,378	2,264,644
Value of Production ... ..	£ 442,375	575,739	660,584	1,214,349	1,321,743
Materials treated—					
Coal ... .. tons	*	323,910	369,424	527,366	564,122
Shale... .. tons	*	55,621	37,865	20,989	27,298
Oil ... .. gals.	*	*	*	4,124,105	3,700,462
Articles produced—					
Gas ... 1,000 cub. feet	2,138,631	4,275,859	5,536,139	8,034,581	8,131,712
Coke ... .. tons	*	176,728	209,980	307,680	346,380
Tar ... .. gals.	*	3,650,000	4,180,054	7,894,590	9,861,830
Ammoniacal Liquor gals.	*	3,365,000	2,459,188	3,896,571	4,216,929
Sulphate of Ammonia tons	*	*	*	4,199	1,061

\* Not available.

† Includes rented premises.

## PRODUCTIVITY.

After investigation it has been decided to discontinue the compilation of tables relating to the volume of output per employee and per unit of horse-power of machinery. So many factors must be considered, not only in the industry as a whole, but in connection with individual establishments, that it is practically impossible at present to deduce tables which would indicate fairly the output per employee or per unit of horse-power.

In connection with the question of the increase or decrease in the productive activity of the manufacturing industry as a whole the reader is referred to the chapter on "Employment and Production."

## LOCAL GOVERNMENT.

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THE Act of 1842, under which the City of Sydney was incorporated, was the first provision in the State for conferring municipal privileges. In 1843 a further step was taken by the incorporation of Campbelltown, Appin, Camden, Narellan, and Picton as one district council, which was subdivided into three, during the same year, by the formation of Campbelltown and Appin into separate councils. From these small beginnings local government grew slowly, and though various amending Acts were passed after 1844 and the number of municipalities and boroughs had grown to 157 by 1891, the system was not materially extended and the Municipalities Act of 1897 consolidated all previous Acts and Amending Acts without altering their main features. The voluntary principle of incorporation was retained, and this was not conducive to the adoption of a general system of local government, as it was natural that, so long as the central Government continued to construct local works, the persons benefited did not seek to gain the right of local management of their affairs. Over the greater part of the State all public works were carried out by the central Government, which also attended to detailed matters of administration. In 1905, however, after exhaustive inquiry, the Local Government (Shires) Act was passed conferring a full measure of local governing powers on the whole of the populous rural districts of the State, comprising three-fifths of its area. In the next year the extensive powers which had been granted to shire councils were conferred on municipal bodies, and later in the same year all existing local government Acts were consolidated. By these measures extensive powers in relation to works and services of a local character were delegated to local authorities. At the same time the State ceased levying the land tax, and empowered councils to levy rates on the unimproved value of lands within their respective districts, besides granting a special endowment to shires. In this way local government bodies received independent financial status. These arrangements continued with little alteration until 1919, when a new charter of local government was enacted extending the powers and functions of local governing bodies into some new and important spheres.

Municipal and shire councils are authorised to exercise the following powers:—The care, control, construction, fencing, and maintenance of all public places, except those vested in the Railway Commissioners, or other public bodies or trustees, and except national works; regulation of traffic; street and road lighting; prevention of bush fires; flood relief and prevention; construction and maintenance of streets, jetties, wharfs, and buildings for the transaction of business; town planning; prevention of nuisances; water supply; regulation and licensing of public vehicles and hawkers; management of parks and commons; control of public gates; providing, controlling, and regulating infants' milk depôts, maternity and infant welfare centres, wash-houses and laundries, civil ambulance, public conveniences, disinfecting chambers, lethal chambers, temporary hospitals and nursing for epidemics, boarding and lodging houses, barbers' establishments, removing dead animals, and many other services.

Other important provisions confer power to borrow, on the security of their income, an amount up to 20 per cent. of the unimproved value of ratable

property in municipalities, or thrice the annual income in the case of shires. Such loans are guaranteed by the Government. Councils are also empowered to effect the re-distribution and reconstruction of existing areas, so that the municipalities may form portions of shires, to acquire land and works, to control cattle slaughtering and public health, to treat noxious animals and plants, to ensure the safety of the public, to regulate hoardings and other structures, to appoint auditors, and to arrange for the inspection of accounts by Government examiners.

Authority is given to groups of municipalities and shires to unite in due form into county councils for the better prosecution of common purposes. These councils exercise such powers as are delegated to them by the constituent councils for their joint benefit in accordance with the Act.

The Act provides also for the division of the municipalities and shires into wards and ridings, respectively, and triennial elections are prescribed. The franchise extends to all owners and occupiers of ratable property of annual value not less than £5, who are over 21 years of age, male and female, unless not naturalised, and they are entitled to be entered on the electors' roll. Any person enrolled is qualified for nomination for a civic office. The usual conditions as to disqualification are provided, and the penalties for acting while not properly qualified.

Under an important provision in the Act rates are levied on the unimproved value of the land, and not on the annual rental, as formerly. The general rate levied must be not less than 1d. in the £, unless the minimum rate is more than sufficient to meet the requirements of the council, in which case a lower rate may be levied with the approval of the Governor. Having imposed the general rate of 1d. on the unimproved value, a council is empowered to charge, either on the improved or on the unimproved value, such additional rate as may be required. Special, local, and loan rates may be imposed on the improved or unimproved value, at the option of the council. The ratable value of coal-mines is fixed at 50 per cent. of the gross value of the average annual output for the preceding three years, and of other mining properties at 40 per cent. for the same period. Commons, public reserves and parks, cemeteries, public hospitals, benevolent institutions, churches and other buildings used exclusively for public worship, free public libraries, and unoccupied Crown lands are exempt from taxation.

Under the Act of 1919 councils must cause a valuation of all ratable land to be made at least once in every three years. The Act also provides for the establishment of cities; and a municipality which has had during a period of five years a population exceeding 20,000 persons and a revenue of £20,000, and which is an independent centre of population, may be proclaimed a city. At the end of 1921, the following municipalities had been proclaimed cities:—Armidale, Bathurst, Broken Hill, Goulburn, Grafton, and Newcastle; but, with the exception of Broken Hill, the districts had been proclaimed under previous Acts.

It is further enacted that all municipalities not receiving statutory endowment under former Acts, if found to be in necessitous circumstances, shall be entitled to a sum not exceeding 3s. 4d. in the £ on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements under proper management of the corporations, endowment cannot be claimed. The rate in the £ may be increased under special circumstances, but advantage has not been taken of this allowance, except in a few cases.

Prior to 1906, when shires were constituted, only a very small portion of the State had been incorporated, as will be seen from the statement below,

which shows the areas incorporated and unincorporated in 1906 in the three great land divisions of the State, exclusive of the Federal Territory:—

Division.	Incorporated.	Unincorporated.	Total.
	sq. miles.	sq. miles.	sq. miles.
Eastern ... ..	1,932	92,881	94,813
Central ... ..	571	88,579	89,150
Western ... ..	282	125,216	125,498
Total ... ..	2,785	306,676	309,461

The area and population of districts incorporated on 31st December, 1920, excluding Lord Howe Island and the Federal Territory of Canberra and Jervis Bay, are shown below. The only part of the State unincorporated was the portion of the Western Division not included in municipalities and the Murrumbidgee Irrigation Areas, which are administered by the Water Conservation and Irrigation Commission.

	Area (sq. miles).	Population.
In Metropolitan Municipalities... ..	209	949,119
In Country Municipalities ... ..	2,636	457,739
In Shires ... ..	181,140	670,123
Total (incorporated)... ..	183,985	2,076,981
Western Division (portion unincorporated) ...	125,454	15,253
Total ... ..	309,439	2,092,234

From this statement it is apparent that, although only 59·4 per cent. of the area of the State is administered by local government, the population embraced therein is 99·3 per cent. of the total population of the State.

The following table shows the area, population and the assessed values of rateable property in the local government areas of the State as at 31st December, 1920, the Metropolitan and Country Districts being shown separately. The figures for the Metropolis include Kuring-gai Shire, but exclude certain municipalities included in the Sydney Metropolitan area as defined in Schedule IV of the Local Government Act of 1919, viz., Auburn, Bankstown, Dundas, Ermington and Rydalmere, Granville, Lidcombe, and Parramatta. The figures for the Sydney Metropolitan area include the abovenamed municipalities, together with the shires of Hornsby, Sutherland, and Warringah.

Local Bodies.	Area.	Population.	Unimproved Capital Value.	Improved Capital Value.	Assessed Annual Value.
Metropolitan Area—	acres.	No.	£	£	£
City of Sydney .. ..	3,327	111,070	33,077,690	84,580,400	3,806,118
Suburbs (including Kuring-gai Shire) ..	114,972	789,550	49,269,878	*	*
Total, Metropolis .. ..	118,299	900,620	82,347,498	*	*
Local Government Areas not included above	329,878	99,762	7,324,702	*	*
Total, Metropolitan Area† ..	448,177	1,000,382	89,672,200	*	*
Country—					
Municipalities .. ..	1,687,197	457,739	25,493,054	68,489,506	4,908,991
Shires .. ..	115,615,360	618,860	114,692,780	*	*
Total, Country .. ..	117,302,557	1,076,599	140,185,834	*	*
Grand Total .. ..	117,750,734	2,076,981	229,858,034	*	*

\* As shires generally do not assess the annual or improved capital values of properties this table cannot be completed. † Schedule IV, Local Government Act, 1919.



The financial position of the bodies in these areas on the same date was as follows :—

Local Bodies.	Total Revenue.			Total Expenditure.	Total Liabilities.	Total Assets.
	Rates Levied.	Other.	Total.			
<b>Metropolitan Area—</b>	£	£	£	£	£	£
City of Sydney .. .. .	623,766	1,101,092	1,724,858	1,747,972	12,243,384	12,714,012
Suburbs (including Kuring-gai Shire) .. .. .	963,266	276,257	1,239,523	1,183,591	1,414,068	1,079,485
Total, Metropolis .. .. .	1,587,032	1,377,349	2,964,381	2,931,563	13,657,452	13,793,497
Local Government Areas not included above .. .. .	117,210	51,672	168,882	159,898	134,477	163,140
Total, Metropolitan Area*	1,704,242	1,429,021	3,133,263	3,091,461	13,791,929	13,956,637
<b>Country—</b>						
Municipalities .. .. .	619,563	636,416	1,255,979	1,190,771	2,568,419	3,411,049
Shires .. .. .	799,396	448,840	1,248,236	1,221,817	198,012	586,904
Total, Country .. .. .	1,418,959	1,085,256	2,504,215	2,421,588	2,766,431	3,997,953
Grand Total .. .. .	3,123,201	2,514,277	5,637,478	5,513,049	16,558,366	17,954,590

\* Schedule IV, Local Government Act, 1919.

Similar particulars of the operations of individual councils are published annually in the Statistical Register of New South Wales.

#### VALUATIONS BY LOCAL GOVERNING BODIES.

Local government finance is based upon taxation of land and improvements thereon, and the rates whence revenue is derived are levied upon the assessed values of all lands (including Crown lands) except such as are a public place, unoccupied Crown lands, Federal lands and buildings, or premises used exclusively for religious or charitable purposes or as public hospitals.

Valuations of ratable property must be made at intervals not exceeding three years by a competent and sworn valuer appointed by the Council, which legally is bound to accept the valuation list when it is presented, and to adopt it as the valuation book for the period beginning 1st January next ensuing. Any owner of property dissatisfied with the value placed upon his land may lodge objection with the Council and appeal to the nearest Court of Petty Sessions, if the valuation does not exceed £5,000, and to the Land and Valuation Court if the valuation exceeds that amount. The Council has no power to amend any valuation, except in case of manifest error, except by direction of a Court.

This system operated for many years without any centralised supervision to secure uniformity; but, in 1916, the Valuation of Land Act provided that standard valuations of the whole of the lands of New South Wales should be made by a Government official, and that these should be used as bases for all taxation purposes. The officer appointed to have this valuation carried out was called the Valuer-General, and up to the end of 1921 the lands of thirty municipalities and six shires had been dealt with. In cases where the Valuer-General has acted, all authority in making valuations is taken away from local bodies, who must accept the new valuation list when it is delivered, and act upon it from 1st January, next ensuing. A

council may, however, ask the Valuer-General to revalue any land which it considers has not been correctly valued.

The definitions of the values to be assessed for local government purposes are as follows:—

The Unimproved Capital Value of land is the amount for which the fee-simple estate in such land could be sold under such reasonable conditions as a *bona-fide* seller would require, assuming that the actual improvements had not been made.

The Improved Capital Value is the amount for which the fee-simple estate of the land, with all improvements and buildings thereon, could be sold.

The Assessed Annual Value is nine-tenths of the fair average rental of land with improvements thereon.

The wide extent of local government has provided assessments of land values so comprehensive as to embrace practically the whole of the occupied lands of the State, and these provide a satisfactory basis for measuring the value of landed property in New South Wales. In considering them, however, it should be recollected that there is little uniformity between the valuations of individual councils, and in most cases the assessments are considerably below market values. They are, moreover, incomplete, since they exclude the extensive unincorporated lands of the Western Division and the valuable lands embraced in the Murrumbidgee irrigation areas, which are administered by a commission. Estimates of the value of the whole of the lands of the State and a discussion of the question of the under-valuation in local government assessments will be found in a later chapter of this Year Book dealing with "Private Wealth." Some further reference to it is made on page 364 of this chapter.

In the following table are shown the aggregate valuations by groups of all local government bodies for the year 1920, together with a comparison of the unimproved values and the value of improvements:—

Division.	Unimproved Value of Land.			Value of Improvements.		
	Total.	Per Head.	Per Acre.	Total.	Per Head.	Per Acre.
	£	£	£ s. d.	£	£	£ s. d.
Sydney—City ...	33,078,000	298	9,942 5 10	51,503,000	464	15,480 6 3
Suburbs ...	46,848,000	61	509 11 11	80,566,000	105	876 7 4
Metropolis ...	79,926,000	91	839 0 10	132,069,000	150	1,386 8 5
Local areas not included above ...	3,567,000	53	92 4 6	5,844,000	87	151 1 11
Total Metropolitan Area ...	83,493,000	88	623 7 6	137,913,000	145	1,029 13 9
Country Municipalities	25,403,000	56	15 2 2	42,996,000	94	25 9 8
Shires ...	120,872,000	180	1 0 11	116,000,000	175†	†1 0 0
Total Incorporated Areas ...	229,858,000	116	1 19 0	296,909,000	143	2 8 9

† Estimated.

The value of improvements in municipalities was £180,909,000, or 166 per cent. of the unimproved value. The total for the City of Sydney was

£51,503,000, or 156 per cent.; for the suburbs, £80,566,000, or 172 per cent.; for other metropolitan areas, £5,844,000, or 164 per cent.; and for the country, £42,996,000, or 169 per cent.

The value of improvements was available for only four shires in 1920. The average value of improvements in those which are available during the last five years, was about 33 per cent. greater than the unimproved value. This average, however, is not representative enough to be considered general. The experience of the Federal Taxation Department is that the average value of improvements is approximately equal to the average unimproved value of the rural lands on which they are placed, and a similar relationship was found to exist in the first shire valuations of 1906, when improvements were valued in a large number of cases.

### *Valuations by Municipalities.*

In the following table the unimproved and improved values of municipalities for 1919 and 1920 are compared. It should be noted that the Metropolitan areas, as shown below, do not include shires, and the figures therefore differ from those given on page .

Division.	Unimproved Value.			Improved Value.		
	1919.	1920.	Increase, 1920.	1919.	1920.	Increase, 1920.
Sydney—	£	£	per cent.	£	£	per cent.
City ... ..	31,831,054	33,077,620	3·92	82,808,760	84,580,400	2·14
Suburbs ... ..	39,672,190	46,847,825	18·09	111,686,717	127,414,223	14·08
Metropolis ... ..	71,503,244	79,925,445	11·78	194,495,477	211,994,623	9·00
Local Areas, not included above	3,080,677	3,567,209	15·79	7,416,889	9,411,002	26·89
Total Metropolitan Area ... ..	74,583,921	83,492,654	11·94	201,912,366	221,405,625	9·65
Country ... ..	22,208,694	25,493,054	14·79	58,642,383	68,489,506	16·79
Total Municipalities	96,792,615	108,985,708	12·60	260,554,749	289,895,131	11·26

The value of improvements, ascertained by deducting the unimproved from the improved values shown above, is shown in the following statement, and it will be seen that increases occurred in all divisions:—

Division.	Value of Improvements.		
	1919.	1920.	Increase.
Sydney—	£	£	per cent.
City ... ..	50,977,706	51,502,780	1·03
Suburbs ... ..	72,014,527	80,566,398	11·88
Metropolis ... ..	122,992,233	132,069,178	7·38
Local Areas, not included above	4,336,212	5,843,793	34·77
Total Metropolitan Area	127,328,445	137,912,971	8·31
Country ... ..	36,433,689	42,996,452	18·01
Total Municipalities	163,762,134	180,909,423	10·47

The capital and annual values of properties in all municipalities show a great increase since 1908, which was the year when the Local Government Act was fully applied to municipalities. The expansion is shown in the following table:—

Municipalities.	1908.			1920.		
	Unimproved Capital Value.	Improved Capital Value.	Assessed Annual Value.	Unimproved Capital Value.	Improved Capital Value.	Assessed Annual Value.
	£	£	£	£	£	£
City of Sydney...	20,457,251	49,718,463	2,301,531	33,077,620	84,580,400	3,806,118
Suburbs...	23,550,417	55,783,965	3,751,567	46,847,825	127,414,223	9,062,432
Metropolis ...	44,007,668	105,502,428	6,053,098	79,925,445	211,994,623	12,868,550
Local Areas, not included above ...	1,409,798	2,935,471	181,346	3,567,209	9,411,002	638,490
Total Metropolitan Area ...	45,417,466	108,437,899	6,234,444	83,492,654	221,405,625	13,507,040
Country...	18,695,185	41,848,767	2,816,416	25,493,054	68,489,506	4,908,991
Total Municipalities ...	64,112,651	150,286,666	9,050,860	108,985,708	289,895,131	18,416,031

It will be observed that the ratio of Assessed Annual Value to Improved Capital Value in 1908 was 6·03 per cent., and, in 1920, 6·36 per cent.; as the assessed annual value is nine-tenths of the actual annual value, the proportions per cent. of annual value to improved value were, in 1908, 6·69 per cent., and in 1920 7·07 per cent.

The increases, both absolute and relative, during the twelve years from 1908 to 1920, were as follow:—

Municipalities.	Unimproved Capital Value.		Improved Capital Value.		Assessed Annual Value.	
	Total Increase.	Increase per cent.	Total Increase.	Increase per cent.	Total Increase.	Increase per cent.
	£		£		£	
City of Sydney ...	12,620,369	61·7	34,861,937	70·1	1,504,587	65·4
Suburbs ...	23,297,408	98·9	71,630,258	128·4	5,310,865	141·6
Metropolis ...	35,917,777	81·6	106,492,195	100·9	6,815,452	112·6
Local Areas, not included above ...	2,157,411	153·0	6,475,531	220·6	457,144	252·1
Total Metropolitan Area ...	38,075,188	83·8	112,967,726	104·2	7,272,596	116·7
Country ...	6,797,869	36·4	26,640,739	63·7	2,092,575	74·3
Total Municipalities	44,873,057	70·0	139,608,465	92·9	9,365,171	103·5

The ratio of increase in the unimproved capital value was highest in the suburbs of Sydney, and lowest in the country municipalities. The suburbs also show the highest ratio for the improved capital value, and for the assessed annual value, while the lowest for these values appear in the country districts.

These results are attributable largely to the operations of the Valuer-General, whose valuations have been made in the past two years, principally in the suburbs of Sydney and Newcastle, where in all cases values were

assessed considerably higher than those formerly made by the councils' valuers, although few of the revised valuation lists were utilised in 1920:

A comparison of the improved and unimproved capital values with the assessed annual value for the year 1920 is given below. With regard to the ratio of the improved capital value, the suburban and country municipalities were practically the same, with 7·1 and 7·2 per cent. respectively. The highest ratio of the unimproved capital value occurred in the suburban and country municipalities, which each yielded 19·3 per cent. The corresponding rates for the City of Sydney were only 4·5 per cent. and 11·5 per cent., the average for the whole of the municipalities being 6·4 per cent. and 16·9 per cent. respectively:—

Municipalities.	Assessed Annual Value.	Ratio of Assessed Annual Value to Improved Capital Value.	Ratio of Assessed Annual Value to Unimproved Capital Value.
	£	per cent.	per cent.
City of Sydney ... ..	3,806,118	4·5	11·5
Suburbs ... ..	9,062,432	7·1	19·3
Metropolis ... ..	12,868,550	6·1	16·1
Local areas not included above ... ..	638,490	6·8	17·9
Total Metropolitan area ... ..	13,507,040	6·1	16·2
Country ... ..	4,908,991	7·2	19·3
Total Municipalities...	18,416,031	6·4	16·9

#### *Valuations by Shires.*

The unimproved capital value of shires from 1910 to 1920 is shown below, the total increase during the period mentioned being £30,936,414, or over 34·4 per cent.

Year.	Unimproved Capital Value.	Year.	Unimproved Capital Value.
	£		£
1910 ... ..	89,935,912	1916 ... ..	105,697,791
1911 ... ..	94,189,939	1917 ... ..	107,695,315
1912 ... ..	97,661,454	1918 ... ..	109,133,215
1913 ... ..	99,452,191	1919 ... ..	110,881,306
1914 ... ..	103,451,177	1920 ... ..	120,872,326
1915 ... ..	104,745,633		

In the period of ten years, 1910-1920, the aggregate valuations of shires have increased by approximately one-third. The area and lands embraced have remained practically unchanged, and this represents roughly the assessed increment of rural land values in the period.

It is not possible to give the improved capital value, or the assessed annual value, as the shires are not compelled to make those valuations, and only a few record them.

#### *Valuations by the Valuer-General.*

There has always been a tendency on the part of municipal valuers to under-estimate the value of properties for purposes of rating, and the extent of this under-valuation can now be gauged by a comparison of the valuations

made by the Valuer-General in certain municipalities and shires with those previously adopted by the local body. The valuations relate to thirty municipalities and six shires, and the Valuer-General's figures for unimproved capital value, improved capital value, and assessed annual value are respectively 37 per cent., 28 per cent., and 36 per cent. higher than the municipal values. In the shires valued the increase on unimproved capital value was 59 per cent.

In the following table the Valuer-General's figures are compared with the values previously adopted for rating purposes, and the percentage of increase is shown also :—

Particulars.	Municipalities.			Shires.		
	Unimproved Capital Value.	Improved Capital Value.	Assessed Annual Value.	Unimproved Capital Value.	Improved Capital Value.	Assessed Annual Value.
Council's Valuation £ 000	28,756	80,712	5,495	7,584	*	*
Valuer-General ... £ 000	39,512	103,207	7,477	12,052	25,884	1,492
Increase ... £ 000	10,756	22,495	1,982	4,468	...	...
Percentage of increase %	37.40	27.87	36.07	58.91	...	...

\* No valuation made.

#### TAXATION BY LOCAL GOVERNING BODIES.

The total revenue collected in 1920 by all the local governing bodies from rates and charges amounted to £4,748,222, equal to £2 5s. 9d. per head of the population residing in the taxable districts. This includes £2,254,392, rates collected by the municipalities; £868,809, rates collected by shires; and £1,625,021, rates collected by the various Water and Sewerage Boards referred to later. The distribution of the total amount is as follows :—

Local Bodies.	General Rates.	Special and Loan Rates.	Total.	Per head of population living in local areas.
	£	£	£	£ s. d.
Municipalities (including City of Sydney)	1,959,522	294,870	2,254,392	1 12 1
Shires ... ..	818,361	50,448	868,809	1 5 11
Metropolitan water and sewerage charges	1,471,366	...	1,471,366	1 6 6
Hunter District water and sewerage charges.	148,484	...	148,484	1 1 11
Grafton and South Grafton Water Board	5,171	...	5,171	0 17 0
Total ... ..	£ 4,402,904	345,318	4,748,222	2 5 9

A comparative statement of the total and *per capita* Local Government rates and charges imposed in each of the five years, 1916–1920, will be found on pages 199 and 200 of this Year Book, where they are considered in relation to the total taxation imposed in the State. While the total taxation imposed in 1920–21 was almost double that of 1916–17, the increase in Local Government taxation was rather more than 50 per cent.

*City of Sydney Ratings.*

The Sydney Corporation Act of 1902 directed that improved property within the city should be assessed at a fair average annual value, with an allowance for outgoings not exceeding 10 per cent., and the unimproved property at a maximum of 6 per cent. on its capital value. On the value of such assessment a city rate not exceeding 2s. in £ might be levied, exclusive of lighting. In 1902, the rate was reduced from 24d., which had been imposed in 1901, to 22d., and still further reduced to 21d. in 1903, which continued until 1915. The Act provided for a special local rate not exceeding 6d. in the £ of annual value for any work for the particular benefit of one locality, but only if two-thirds of the ratepayers of the locality petitioned for such work; occasional advantage of this power was taken for street-watering, though not of late years. As already mentioned, the amending Acts of 1908 and 1916 repealed the former provisions, and the rate for 1921 was 5d. in the £ of unimproved capital value, which covers all services.

The following table shows the rate struck in the £, and the total amount levied, in each year from 1901 to 1921 :—

Year.				Rate struck in the £.	Total Amount Levied.
				d.	£
1901	...	...	...	24 on A.A.V. ...	195,164
1902	...	...	...	22 on A.A.V. ...	184,780
1903	...	...	...	21 on A.A.V. ...	180,477
1908	...	...	...	21 on A.A.V. ...	196,854
1909	...	...	...	21 on A.A.V. ...	284,500
1912	...	...	...	1 on U.C.V. ...	326,651
1913	...	...	...	21 on A.A.V. ...	390,678
1915	...	...	...	1½ on U.C.V. ...	466,943
1916	...	...	...	4 on U.C.V. ...	520,537
1917	...	...	...	3½ on U.C.V. ...	455,040
1918	...	...	...	3½ on U.C.V. ...	465,988
1919	...	...	...	4½ on U.C.V. ...	587,376
1920	...	...	...	4½ on U.C.V. ...	654,661
1921	...	...	...	5 on U.C.V. ...	747,654

*Suburban and Country Municipality Ratings.*

The other municipal councils were formerly empowered to raise revenue by rates not exceeding 1s. in the £ for ordinary purposes and the same amount for special purposes, with 6d. in addition for street watering. The amount of each rate was calculated upon the rental value, which was represented by nine-tenths of the fair average annual rental of all buildings and cultivated lands, or lands let for pastoral, mining, or other purposes, plus 5 per cent. of the capital value of the fee-simple of all unimproved lands.

Municipalities and shires which avail themselves of the provisions of the Country Towns Water and Sewerage Acts are empowered to levy a rate for each service not exceeding a maximum of 2s. in the £ on the assessed annual value of land and tenements, in addition to the ordinary municipal rates.

In order to aid municipalities in their formative stages, the 1897 Act provided for endowment by the State during a period of fifteen years, and this right has been preserved in the Act of 1919. In each of the first five years after incorporation every municipality is entitled to a sum equal to the whole amount actually received from general rates; in each of the next succeeding five years, a sum equal to one-half; and in each of the next five years, a sum equal to one-fourth of such receipts. After the expiry of

fifteen years the State assistance ceases, and any further aid from the State is in the nature of a special grant. At the close of the year 1920 there were only two municipalities entitled to the original statutory endowment.

Suburban and country municipalities are obliged to levy a general rate on the unimproved capital value of all ratable land, and may levy additional, special, local, or loan rates on either the unimproved or the improved capital value. The only rates based on the annual value are those charged by the Metropolitan and the Hunter District Water Supply and Sewerage Boards.

As previously stated, the general rate must be not less than 1d. in the £ on the unimproved capital value of all ratable land, and the total amount to be derived from the general rate and additional rates taken must not exceed the amount yielded by a rate of 2d. in the £ on the unimproved value and 2s. in the £ on the assessed annual value of all ratable land. In 1920 only three municipalities levied additional general rates, the remainder confining themselves to one general rate. The variation in the general rates is rather remarkable, as in the suburbs of Sydney in 1920 they ranged from 3d. to 6d., and in the country from 1d. to 18d.

The majority of suburban councils in 1920 levied general rates between 4d. and 5d., the next in number being between 5d. and 6d., while in the country the highest proportion levied 6d. and over, the next in order being between 4d. and 5d., and between 5d. and 6d., followed by those levying 3d. and under 4d. The councils which levied 6d. and over in the £ during 1920 were Ballina, Braidwood, Deniliquin, Goulburn, Gunnedah, Moree, Mudgee, Nyngan, Orange, Singleton, Warialda, and Wyalong, each 6d.; Young, 6½d.; Cooma, Coonamble, Murrurundi, Narromine, and Wallsend, each 6½; Aberdeen, Bathurst, Hay, and Murrumburrah, each 7d.; Lambton, 7½d.; Carcoar, Narrabri West, Scone, and Wentworth, each 8d.; Broken Hill, 8½d.; Bourke and Wilcannia, each 11d.; Cobar, 12d.; Wrightville, 16d.; and Hillgrove, 18d. These rates are exclusive of the amounts levied on mines. None of the suburban councils levied 1d. in the £, but this rate was imposed in two country municipalities.

The first year in which the general rate was levied on the unimproved capital value was 1908, and a comparison of the general rate struck for various years since then is shown below:—

Year.	Number of Municipalities which levied a General Rate on Unimproved Capital Value of—					
	1d. and under 2d.	2d. and under 3d.	3d. and under 4d.	4d. and under 5d.	5d. and under 6d.	6d. and over.
1908—						
Suburban Municipalities	1	11	17	9	3	...
Country	31	36	42	26	9	5
1911—						
Suburban	...	4	16	18	2	...
Country	23	29	43	30	17	7
1916—						
Suburban	...	2	6	26	5	1
Country	13	17	42	42	17	13
1920—						
Suburban	...	...	9	23	14	1
Country	8	12	25	30	29	33

This table exhibits a marked tendency towards higher rating, particularly in the country municipalities, where the rise in assessed values of ratable property has been less than in the suburbs.



One hundred and nineteen municipalities levied special, local, and loan rates on the unimproved capital value in 1920, ranging from  $\frac{1}{8}$ d. to 30d. in the £, and twenty-four on the improved capital value, ranging from  $\frac{1}{8}$ d. to 3-6d. in the £.

#### *Shire Ratings.*

The rates of shires have always been levied on the unimproved capital value. The number of shires which levied general rates at each individual rate from 1907 to 1920 is shown in the following table :—

General Rate levied in £.	Number of Shires.					
	1907.	1911.	1917.	1918.	1919.	1920.
d.						
$\frac{1}{8}$	1	1	1	1	...	...
$\frac{1}{4}$	1	3	2	2	2	2
$\frac{3}{4}$	3	2	4	3	1	1
$\frac{1}{2}$	...	...	...	2	2	2
1	104	64	18	15	12	14
$1\frac{1}{8}$	...	3	2	...	1	...
$1\frac{1}{4}$	10	23	11	9	11	8
$1\frac{3}{8}$	...	1	1	1	...	1
$1\frac{1}{2}$	12	22	27	24	23	13
$1\frac{3}{4}$	...	1	...	...	...	...
$1\frac{7}{8}$	...	...	4	3	3	8
2	3	14	66	76	81	87
Total ...	134	134	136	136	136	136

The tendency towards higher taxation is very marked. Whereas 104 shires imposed a general rate of 1d. in 1907, no less than eighty-seven out of 136 levied the maximum rate of 2d. in the £ in 1920.

The general rates levied in 1920 and the unimproved capital value in each case were as follow :—

No. of Shires.	General Rate levied in £.	Unimproved Capital Value.
	d.	£
2	$\frac{1}{8}$	2,567,040
1	$\frac{1}{4}$	1,265,196
2	$\frac{3}{4}$	1,953,864
14	1	20,202,299
8	$1\frac{1}{8}$	9,917,999
1	$1\frac{1}{4}$	1,166,622
13	$1\frac{3}{8}$	14,055,546
8	$1\frac{1}{2}$	8,645,407
87	2	61,098,353
136	...	120,872,326

The maximum rate of 2d. in the £ was levied on approximately one-half of the ratable property in shires in 1920.

In addition to the general rates, additional general, special, local, and loan rates were also levied by forty-three shires, ranging from  $\frac{1}{10}$ d. to 5d. in the £.

The purposes for which these special, local, and loan rates were imposed were :— Roads and street improvements and maintenance, footpaths, kerbing

and guttering, water supply, drainage, street lighting, street watering, bridges, parks, fire brigade, destruction of noxious weeds, foreshores improvement, and the payment of interest, &c., on loans current.

The total amount of general and additional general rates levied was £818,361, equal to an average rate of 1·62d. in the £, and of special and local rates £50,448, equal to an average rate of 0·10d. in the £ on the unimproved value of land. These amounts represent the rates actually levied in respect of the year 1920, and do not agree with the amount shown later, the difference being due to the inclusion of interest on unpaid rates.

#### CITY OF SYDNEY.

The City of Sydney was incorporated on 20th July, 1842, and was originally divided into six wards.

Great dissatisfaction soon arose as to the manner in which the affairs of the Corporation were conducted, and following upon the recommendation of a Select Committee of the Legislative Assembly, the Council was dissolved, and the administration transferred to a commission of three persons, who controlled the affairs of the city from the beginning of 1854 to the end of 1857, when a new Council, consisting of sixteen aldermen—two for each ward—came into existence.

In 1900 an Amending Act was passed, dividing the city into twelve wards, each returning two aldermen. The innovation of retiring the whole of the aldermen simultaneously was introduced, with a provision for the election of a new Council on the 1st December in every second year, re-election of qualified persons being permitted. Important changes were effected under this Act as to the franchise, sub-tenants and lodgers being placed on the rolls, and extended powers were conferred on the Council as to resumption of lands for city improvements.

In 1902 an Act was passed consolidating statutes previously passed in regard to the City of Sydney. In 1905 an amending Act provided for the better government of the city, especially with regard to the control of boardings, the proper cleansing of footways, the prevention or regulation of the smoke nuisance from furnaces and chimneys, the regulation and control of refreshment stalls and stands, the control of juvenile hawkers and shoe-blacks, the prevention of betting in public places. The tenure of office of the aldermen was altered to three years.

The Municipality of Camperdown was amalgamated with the City of Sydney on 1st January, 1909, and the Council now consists of twenty-six aldermen elected every third year by thirteen wards. The Lord Mayor is elected by the aldermen from their own number, but under an Act passed in 1916, in the event of an equal number of votes being polled, the Governor in Council may appoint one of the aldermen to the position. The Act also regulated the election of the city members of the Metropolitan Board of Water Supply and Sewerage, and of the Fire Brigades Board, and extended the power of the Council in regard to resumptions, in order to provide workmen's dwellings; and further provision was made for the extension of the city boundaries.

In 1908 a further Amending Act was passed, containing several important provisions. Commencing with the year 1909, the Council was compelled to levy a rate, not less than 1d. in the £, upon the unimproved capital value, in addition to any rate imposed under the Act of 1902. Under the former Act the rate levied in 1915, the last year affected by the 1908 Act, was 1½d.

in the £ on the unimproved capital value, and under the 1902 Act 21d. in the £ on the assessed annual value. It is provided, however, that the total amount leviable shall not exceed the amount which would be yielded by a rate of 3d. in the £ on the unimproved capital value, and 2s. in the £ on the assessed annual value, taken together, of all ratable property. On the Council imposing such rate on the unimproved capital value, the State land tax was suspended automatically. The valuation of the unimproved capital value is to be made at least once in every five years. The Council was empowered also to establish public libraries and milk depôts, to control certain parks, and to widen certain streets. The Lending Branch of the Public Library and various parks and public ways were vested in the Council by the Government under certain conditions.

The Sydney Corporation (Dwelling-houses) Act, 1912, enables the City Council to erect and let dwelling-houses, and for that purpose to acquire land.

Another amending Act, passed in 1916, empowers the Council to levy rates on persons owning pipes, wires, cables, and rails on, under, over, or through any public places under the control of the Council, excepting properties owned by the Crown. Also, under the same Act, the Sydney Council may levy a general rate, not exceeding 6d. in the £, on the unimproved value of all ratable property in the city. This Act amends the 1908 Act so far as the latter relates to the land tax on the unimproved capital value and the city rate on the assessed annual value.

#### *City of Sydney Accounts.*

The Council of the City of Sydney conducts its affairs under the City Corporation Acts, and therefore is not bound by the provisions of the Local Government Act. The various accounts of the city were formerly kept on a "cash" basis, except those relating to the Electricity Fund, but in 1913 the system was altered, and the Revenue and Capital transactions now are shown separately in the same manner as those of all other local bodies. As details cannot be allocated in many instances to the headings of expenditure and income as set out in the system of accounts prescribed under the Local Government regulations, the treatment of municipal accounts is divided into two parts, one dealing with the City of Sydney, and the other with the suburbs of Sydney and country municipalities.

#### *City of Sydney—Receipts.*

The receipts from the various funds, exclusive of the Electric Lighting Fund, in 1920, amounted to £968,346, the City Fund contributing £779,368, the Public Markets Fund, £110,306, and the Resumption Account £78,672. Although abstracts of receipts and disbursements in respect of the Public Markets Fund and the Resumption Account are shown separately in the City accounts, these funds are really subsidiary to the City Fund, their balances at the end of the year being transferred to the last-mentioned fund.

The following is a statement for the year 1920 of the receipts of the City Fund under appropriate headings:—

	£
General Purposes ... ..	629,567
Works ... ..	10,735
Health Administration ... ..	35,624
Public Services... ..	54,245
Municipal Property ... ..	16,609
Miscellaneous ... ..	32,588
Total ... ..	£779,368

City rates, £624,083. which include interest, form practically the whole of the receipts under the heading "General Purposes." As provided by the amending Act of 1908, rating on the unimproved value of land was first brought into force in 1909. Under the amending Act of 1915, the City rate is now levied on the unimproved capital value only.

*City of Sydney—Disbursements.*

The disbursements in 1920 amounted to £993,541 viz.: City Fund, £717,138; Public Markets Fund, £105,876; and Resumptions Account, £170,527. Shown under the same headings as the receipts, the following were the disbursements of the City Fund:—

	£
General Purposes ... ..	55,709
Works ... ..	125,123
Health Administration ... ..	201,541
Public Services... ..	104,720
Municipal Property ... ..	47,511
Miscellaneous (Interest, Sinking Fund, &c.) ...	182,529
<b>Total ... ..</b>	<b>£717,138</b>

Salaries, which amounted to £34,877, absorbed a very large share of the expenses for General Purposes. Of the sum spent on Public Works, street maintenance accounted for £60,086, footpaths for £30,492, and wood-paving for £18,983. On City cleansing £130,985 were expended, and this was the main item in Health Administration. The large amount shown under "Miscellaneous" includes the Annual Debenture indebtedness, which in 1920 was £76,643 for interest, commission, &c., and £21,496 for Sinking Fund contributions.

The receipts and disbursements of the Public Markets Fund were £110,306 and £105,876 respectively, the latter amount being inclusive of interest and sinking fund, showing a surplus of £4,430 on the year's transactions, which has been included in the City Fund. The Queen Victoria Markets brought in revenue to the extent of £31,123, or 28 per cent. of the total; and the receipts from the Municipal Markets amounted to £35,530, or about 32 per cent. of the whole.

The receipts and disbursements of the Resumption Account were £78,672 and £170,527 respectively, showing a debit of £91,855 after paying interest and contribution to sinking fund, and this deficit was also transferred to the City Fund.

*City Electricity Undertaking.*

The next account to be considered is the Electricity Works Fund, and the expenditure and income for the year ended 31st December, 1920, are shown below:—

Expenditure.		Income.	
	£		£
Generation of Electricity ...	215,457	Private Lighting ... ..	382,897
Distribution ... ..	129,624	Public Lighting ... ..	51,818
Management ... ..	113,473	Power Supply ... ..	288,755
Bad debts written off ... ..	300	Rentals—Meters, Motors, Lamps,	
Purchase of Electricity ... ..	44,789	&c. ... ..	30,533
		Miscellaneous ... ..	2,169
<b>Total ... ..</b>	<b>£503,643</b>		
Balance carried to Net Revenue			
Account ... ..	252,869		
<b>Total ... ..</b>	<b>£756,512</b>	<b>Total ... ..</b>	<b>£756,512</b>

Generation forms the largest item of expenditure, accounting for 42·8 per cent. of the whole, or 46·9 per cent. of the total expenditure, less the electricity purchased. Distribution cost 25·7 per cent., management 22·5 per cent., amounts written off 0·1 per cent., and electricity purchased 8·9 per cent. of the whole.

The sales of current to the public for light and power amounted to £695,661, and to the Council £27,809

The gross profit carried to the Net Revenue Account was £254,849, viz., £252,869 for 1920, as shown above, and £1,980 brought forward from 1919. The charges against the profits were:—Interest on Debentures and Overdraft, £125,266; Sinking Fund contribution, £21,216; Depreciation Reserve Account, £95,111; and written off, flotation expenses, &c., £9,195, making a total of £250,788. It will be seen from the foregoing that the net gain for the year 1920, after paying interest and Sinking Fund, was £4,061, which is carried forward to Profit and Loss Account for 1921.

The position in 1920 was not as favourable as in former years, and in order to cover any possible loss in 1921, the City Council applied to the Government for permission to increase the charge for electricity by  $\frac{1}{2}$ d. per unit. An inquiry was held by a Supreme Court Judge in the manner prescribed by law, and upon receipt of his certificate that the cost of generation and supply had increased by  $\frac{1}{2}$ d. per unit, the Council was empowered to increase its charge for light and power accordingly.

Below is a summary of the balance-sheet of the Electricity Works Fund on 31st December, 1920:—

Liabilities.				Assets.			

The following table serves to emphasise the rapid growth of the electric lighting undertaking. The figures quoted show the actual profit made each year, excluding the accumulated profits brought forward from previous years :—

		1906.	1911.	1916.	1919.	1920.
Quantity Sold	Units.	3,927,330	17,768,210	48,532,901	78,583,579	96,221,685
Expenditure...	£	21,567	95,428	211,263	363,811	503,643
Income ...	£	40,984	172,693	433,996	600,978	756,512
Surplus ...	£	19,417	*94,861	222,733	237,167	252,869
Charges against Surplus	£	20,602	66,470	192,071	218,056	250,788
Net gain ...	£	(—) 1,185	28,391	30,662	19,111	2,031

\* Includes surplus of a purchased company, £17,596. (—) Denotes loss.

The whole of the City, including the public parks, is now illuminated, and the majority of the suburbs also receive their light from this source.\*

*City of Sydney—Balance-sheet.*

The following is a Summary of Liabilities and Assets of all funds of the City of Sydney as at 31st December, 1920 :—

Liabilities.			Assets.		
		£			£
Debentures current	...	7,997,690	Bank Balances, Cr.	...	559,757
Bank Balances, Dr.	...	829,714	Landed Properties, Baths, and		
Sundry Creditors	...	1,012,209	Sundries	...	6,554,758
Sinking Funds	...	945,784	Machinery, Plant, Furniture,		
Reserves	...	1,457,987	Stores, &c.	...	3,415,915
		£12,243,384	Sundry Debtors	...	276,351
			Sinking Funds	...	933,545
Excess of Assets	...	470,628	Other Investments	...	400,527
			Flotation Expenses and Sundries		181,304
			Revenue Accounts	...	91,855
		£12,714,012			£12,714,012

Notwithstanding the large Loan indebtedness the assets exceeded the liabilities by £470,638, and it should be noted that the Debentures included £2,517,012 borrowed in connection with Electric Lighting, and £989,013 for Public Markets. As the proceeds of those loans have been spent on reproductive municipal works, the undertakings referred to should provide the annual interest charges and sinking fund contributions, and they were quite self-supporting in 1920. Landed properties, baths, etc., which comprise about 52 per cent. of the assets, include such large items as Public Markets, £1,454,758; Town Hall, &c., £890,557; Resumptions, £3,021,730; Electric Light, Land, and Buildings, £674,051. The accumulated Sinking Fund, £933,544, as against a Debenture Debt of £7,997,690, must be regarded as a satisfactory cover.

*Progress of City of Sydney.*

The following table shows the progress of the City of Sydney during the five years ended 1920; the population shown in each year has been adjusted since last publication, in accordance with the results of the Census taken in April, 1921 :—

Particulars.	1916.	1917.	1918.	1919.	1920.
Area ... .. Acres	3,327	3,327	3,327	3,327	3,327
Population ... No.	115,116	114,430	113,610	112,110	111,070
Unimproved Capital Value	£ 31,168,904	£ 31,130,368	£ 31,880,295	£ 31,831,054	£ 33,077,620
Improved Capital Value ...	80,264,720	81,976,260	82,027,200	82,808,760	84,580,400
Assessed Annual Value ...	3,466,550	3,533,779	3,691,224	3,726,395	3,806,118
City Fund—					
Income—Rates ...	525,869	456,612	466,558	587,809	624,083
Other sources	80,790	74,195	87,704	115,379	155,285
Total ...	606,659	530,807	554,262	703,188	779,368
Expenditure ...	454,711	493,903	526,083	609,739	717,138
Public Markets Fund—					
Income ... ..	72,362	80,583	87,370	103,977	110,306
Expenditure ...	88,654	88,860	89,891	99,082	105,876
Resumption Account—					
Income ... ..	84,968	85,048	78,720	75,667	78,672
Expenditure ...	140,574	160,585	161,207	163,589	170,527
Electricity Works Fund—					
Income ... ..	433,996	464,968	542,818	600,978	756,512
Expenditure ...	403,334	484,839	468,949	581,867	754,431
All Funds—					
Total Income ...	1,197,985	1,161,406	1,263,170	1,483,810	1,724,858
Total Expenditure ...	1,087,273	1,228,187	1,246,130	1,454,277	1,747,972
Excess of Income ...	110,712	(—) 66,781	17,040	29,533	(—) 23,114
All Funds—					
Liabilities ... ..	9,751,011	10,469,229	10,664,813	11,122,589	12,243,384
Assets ... ..	10,005,232	10,734,793	11,120,974	11,578,854	12,714,012
Excess of Assets ...	254,221	265,564	456,161	456,265	470,628
Loans outstanding ...	7,050,100	7,478,960	7,502,558	7,464,170	7,997,590
Sinking Fund ... ..	637,313	729,447	821,121	827,028	933,544

(—) Denotes excess of Expenditure.

## MUNICIPALITIES.

*General Finance.*

The Local Government Act, 1919, prescribes that there must be a General Fund in each area, to which must be paid the proceeds of all general and additional general rates, loans, moneys received by way of grant, endowment, etc., from the Government, and miscellaneous income not required by law to be carried to other funds. The expenditure from the General Fund must be on administration, health, roads, and other public services.

There must be a Special Fund for each special rate levied, and for each work or service conducted by the Council in respect of which the special rate has been made, and the fund may be used only for the purposes of such work or service. A Local Fund also must be kept for each local rate levied, with restrictions similar to those in the case of Special Fund. The expenditure of the Local Fund is confined to works in the specified portion of the area.

A Trading Fund must be kept in respect of each trading undertaking conducted by the Council, into which all moneys received, whether from ordinary sources, or loans, transfers, etc., must be paid and a separate account must be kept. The fund may be applied to the maintenance of the works, payment of interest and principal of loans, or other purposes incidental to the working of the undertaking.

All loan proceeds must be administered by the service to which they relate, and cannot be transferred from one fund to another, except by authority of the Minister.

The revenue of special and local funds must provide the money to meet not only the ordinary cost of maintaining the services, but also the obligations of the corresponding loan funds.

In addition to the above-mentioned funds, there must also be a Trust Fund, which consists of all money received from the Government, pending transfer to appropriate funds; all amounts held on deposit from contractors, etc., and any other moneys held in trust by the Council.

The Regulations under the Act prescribe the system of accounts to be adopted. The accounts must be "Income and Expenditure Accounts," kept by double entry, and each "fund" must have a separate banking account. Thus there is shown for each General, Special, Local, or Trading Fund a Revenue Account, or Profit and Loss Account, giving the total expenditure chargeable for the period, whether paid or unpaid, and the total income for the same period, whether received or outstanding. A balance-sheet is also required for each fund with appropriate liabilities and assets, and an aggregate balance-sheet must also be published. Only "realisable" assets may be shown, so that the whole of the roads, bridges, drains, and other constructive work, are excluded.

In the tables which follow the areas formerly described as Suburban and Country have been altered to conform to the Metropolitan area defined in Schedule IV of the Local Government Act of 1919, and in the following tables the figures relating to municipalities for 1908 have been reclassified in order to show the comparison with 1920 on the new basis. The municipalities transferred from the Country to the Metropolitan area are all more or less dependent on the Metropolis, being as follow :—Auburn, Bankstown, Dundas, Ermington and Rydalmere, Granville, Lidcombe (formerly Rookwood), and Parramatta. For reasons already described, however, the transactions of the City of Sydney are not included in the tables which follow,



Considerable increases in the transactions of the General Fund, with corresponding decreases in the Special, Local, and Loan Funds, are apparent when compared with previous years, due to the application of the Local Government Act of 1919, under which many Special, Local, and Loan Funds were absorbed by the General Fund.

### *Expenditure.*

The gross expenditure during 1920 by the various municipalities under the Local Government Act amounted to £2,439,329, which was £117,875 less than the income. The following statement shows the expenditure allocated to the various funds in 1908 and 1920.

Funds.	1908.			1920.		
	Metro- politan Area.	Country.	Total.	Metro- politan Area.	Country.	Total.
General Fund ... ..	£ 368,479	£ 310,613	£ 679,092	£ 1,215,216	£ 726,163	£ 1,941,379
Trading Accounts ...	7,078	50,167	57,245	2,071	263,179	265,250
Special and Local Funds	8,380	64,405	72,485	22,186	209,684	231,870
Loan Funds ... ..	34,146	24,275	58,421	85	745	830
Gross Expenditure ...	418,083	449,160	867,243	1,239,558	1,199,771	2,439,329

The greatest expenditure was naturally from the General Fund, which now includes practically all the Loan Funds, and in 1920 accounted for 80 per cent. of the whole. The trading concerns of the municipalities are gas and electricity; the Special and Local Funds relate to water supply, sewerage, sanitary and garbage, street-watering, street-lighting, drainage, fire brigades, parks and reserves, and other miscellaneous matters.

Details of the expenditure from the General Fund are shown below :—

Head of Expenditure.	1908.			1920.		
	Metro- politan Area.	Country.	Total.	Metro- politan Area.	Country.	Total.
Administrative expenses	£ 49,004	£ 56,568	£ 105,572	£ 103,131	£ 87,641	£ 190,772
Public Works ... ..	157,263	108,177	265,440	731,379	305,222	1,036,601
Health Administration ...	43,121	65,518	108,639	191,305	221,994	413,299
Public Services ... ..	63,881	39,104	102,985	138,567	68,423	206,990
Municipal Property ...	7,142	7,324	14,466	35,416	32,437	67,853
Miscellaneous—Rates and Interest Abandoned, Transfers, &c. ...	48,068	33,922	81,990	15,418	10,446	25,864
Total Expenditure ...	368,479	310,613	679,092	1,215,216	726,163	1,941,379

The proportion under each head to the total expenditure of the General Fund was as follows :—

Head of Expenditure.	1908.			1920.		
	Metropoli- tan Area.	Country.	Total.	Metropoli- tan Area.	Country.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Administrative Expenses ...	13·3	18·2	15·5	8·5	12·1	9·8
Public Works ... ..	42·7	34·8	39·1	60·2	42·0	53·4
Health Administration ...	11·7	21·1	16·0	15·7	30·6	21·3
Public Services ... ..	17·3	12·6	15·2	11·4	9·4	10·7
Municipal Property ... ..	1·9	2·4	2·1	2·9	4·5	3·5
Miscellaneous—Rates and In- terest abandoned, Transfers, &c. ... ..	13·1	10·9	12·1	1·3	1·4	1·3
Total ... ..	100·0	100·0	100·0	100·0	100·0	100·0

In 1920, of the expenditure by municipalities from the General Fund, 53·4 per cent. was on public works. The amount expended on the actual maintenance and construction of works of a public character, viz., roads, streets, bridges, culverts, drains, wharves, ferries, etc., amounted to £952,931, while the expenses of supervision, such as the salary of engineers, etc., amounted to £35,685, or 3·4 per cent. of the total amount expended.

The relative cost of administration was largest in the country, being about 12 per cent. of the total expenditure; the Metropolitan municipalities spent only 8·5 per cent. under the same heading, and the City of Sydney about 8 per cent. So far as the municipalities are concerned, the figures relating to administrative expenses quoted above refer only to those payable for general purposes; other services (such as sanitary and garbage) and the other funds transfer their share of the administrative expenses to the "General Purposes" service, and these amounts are not included in the above figures. The high relative cost of administration in the country is due to the sparse population and small revenue of many of the municipalities, as in such cases the expenses on account of salaries, etc., are larger proportionately than those in the more closely settled localities.

The Trading Accounts, which relate to the supply of gas or electricity, will be treated later under those headings, and the special Water and Sewerage Funds will also be discussed separately.

#### *Income.*

The gross income in 1920 of all the municipalities brought under the provision of the Local Government Act was £2,557,204, including £55,616 received as endowments or grants from the Government. Under the same

funds as shown in the expenditure, the income for 1908 and 1920 was as follows :—

Funds	1908.			1920.		
	Metropoli- tan Area.	Country.	Total.	Metropoli- tan Area.	Country.	Total.
	£	£	£	£	£	£
General Fund ... ..	405,926	336,852	742,778	1,272,116	750,260	2,022,376
Trading Accounts ... ..	6,863	59,814	66,677	1,452	281,846	283,299
Special and Local Funds	7,096	66,408	73,504	26,960	223,128	250,088
Loan Funds ... ..	45,581	37,102	82,683	696	745	1,441
Gross Income ... ..	465,466	500,176	965,642	1,301,225	1,255,979	2,557,204

Details of the items of the General Fund for 1908 and 1920 are as follows :—

Source of Income.	1908.			1920.		
	Metropoli- tan Area.	Country.	Total.	Metropoli- tan Area.	Country.	Total.
	£	£	£	£	£	£
General Purposes—						
Rates levied (including interest)	342,908	219,743	562,651	919,053	433,564	1,352,617
Government Endowments, &c.	643	4,754	5,397	476	100	576
Sundries ... ..	4,775	4,555	9,330	14,983	9,514	24,497
Public Works* ... ..	19,195	18,657	37,852	172,897	60,440	233,337
Health Administration* ... ..	23,283	56,248	79,531	91,907	180,885	272,792
Public Services* ... ..	4,072	15,371	19,443	31,869	26,573	58,442
Municipal Property ... ..	8,259	16,563	24,822	34,680	36,877	71,557
Miscellaneous ... ..	2,791	961	3,752	6,251	2,307	8,558
Total ... ..	405,926	336,852	742,778	1,272,116	750,260	2,022,376

\* Including Government grants.

The amount of Government assistance included in the above income in 1920 amounted to £55,616, of which £576 represented Endowment, and the contributions to Public Works (roads, streets, bridges, &c.) were £50,635; while £3,966 was granted for Health Administration, and £439 for Public Services.

Stating the receipts under each head as a percentage of the total income of the General Fund, the following results are obtained :—

Source of Income.	1908.			1920.		
	Metropoli- tan Area.	Country.	Total.	Metropoli- tan Area.	Country.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
General Purposes—						
Rates levied (including interest)	84·5	65·2	75·8	72·2	57·8	66·9
Government Endowments, &c.	0·2	1·4	0·7	...	...	...
Sundries ... ..	1·2	1·4	1·3	1·2	1·3	1·2
Public Works* ... ..	4·7	5·5	5·1	13·6	8·1	11·6
Health Administration* ... ..	5·7	16·7	10·7	7·2	24·1	13·5
Public Services* ... ..	1·0	4·6	2·6	2·5	3·5	2·9
Municipal Property ... ..	2·0	4·9	3·3	2·8	4·9	3·5
Miscellaneous ... ..	0·7	0·3	0·5	0·5	0·3	0·4
Total ... ..	100·0	100·0	100·0	100·0	100·0	100·0

\* Including Government grants.

The bulk of the general income was received from rates, the average in 1920 for all municipalities being 66·9 per cent., the proportion in the suburbs being 72·2 per cent., and in the country 57·8 per cent. The next important source of income was from Health Administration, which accounted for 13·5 per cent. of the total income; the bulk of the revenue in this case is derived from sanitary and garbage fees, the lower proportion in the Metropolitan area being due to the fact that in many suburban municipalities extensive sanitary services are rendered by the Metropolitan Board of Water Supply and Sewerage. Income from Public Works represented 11·6 per cent. of the total receipts, but about 22 per cent. of the revenue from that source was provided by the Government as grants. In the suburbs, the Metropolitan Board of Water Supply and Sewerage levies charges in addition to those made by the municipalities, and reference to these is made later on.

*Special and Local Funds.*

The expenditure and income of the Special and Local Funds for the years 1908 and 1920 are shown in the following table:—

Funds.	1908.			1920.		
	Metropoli- tan Area.	Country.	Total.	Metropoli- tan Area.	Country.	Total.
<b>Expenditure—</b>	£	£	£	£	£	£
Water Supply ... ..	...	51,139	51,139	...	134,876	134,876
Sewerage ... ..	...	4,468	4,468	...	35,509	35,509
Sanitary and Garbage ... ..	...	...	...	13,783	1,959	15,742
Street Lighting ... ..	2,270	6,342	8,612	3,607	31,321	34,928
Street Watering ... ..	1,887	208	2,095	160	738	898
Miscellaneous ... ..	4,223	1,948	6,171	4,636	5,281	9,917
<b>Total ... ..</b>	<b>8,380</b>	<b>64,105</b>	<b>72,485</b>	<b>22,186</b>	<b>209,684</b>	<b>231,870</b>
<b>Income—</b>						
Water Supply ... ..	...	53,991	53,991	...	142,662	142,662
Sewerage ... ..	...	3,159	3,159	...	40,268	40,268
Sanitary and Garbage ... ..	...	...	...	16,731	1,922	18,653
Street Lighting ... ..	...	5,996	5,996	4,571	32,523	37,094
Street Watering ... ..	2,724	308	3,032	165	877	1,042
Miscellaneous ... ..	4,372	2,954	7,326	5,493	4,876	10,369
<b>Total ... ..</b>	<b>7,096</b>	<b>66,408</b>	<b>73,504</b>	<b>26,960</b>	<b>223,128</b>	<b>250,088</b>

The Water and Sewerage Services are the most important of those mentioned above so far as the country is concerned, the suburbs of Sydney being supplied by the Metropolitan Board of Water Supply and Sewerage.

*Balance-sheet.*

The financial position of the municipalities, at 31st December, 1908 and 1920, is shown by the following statement of liabilities and assets of the various funds:—

Funds.	1908.			1920.		
	Metro- politan Area.	Country.	Total.	Metro- politan Area.	Country.	Total.
<b>Liabilities—</b>	£	£	£	£	£	£
General Fund .. ..	61,760	96,592	158,352	1,460,469	419,312	1,879,781
Trading Accounts ...	2,337	22,492	24,829	22,746	442,426	465,172
Special and Local Funds	495	766,412	766,907	3,161	1,694,854	1,698,015
Loan Funds ... ..	858,937	553,989	1,412,926	2,020	11,827	13,847
Total ... ..	923,529	1,439,485	2,363,014	1,488,396	2,568,419	4,056,815
<b>Assets—</b>						
General Fund ... ..	253,052	487,761	740,813	1,130,357	815,380	1,945,737
Trading Accounts ...	1,890	65,151	67,041	22,128	746,754	768,882
Special and Local Funds	3,056	790,965	794,021	13,537	1,836,719	1,850,256
Loan Funds ... ..	197,870	358,682	556,552	302	12,196	12,498
Total ... ..	455,868	1,702,559	2,158,427	1,166,324	3,411,049	4,577,373
Excess of Assets ... ..	...	263,074	...	...	842,630	520,558
Excess of Liabilities ...	467,661	...	204,587	322,072	...	...

The following table indicates the nature of the liabilities and assets of the municipalities as at 31st December, 1920. The gross totals do not agree with the figures for 1920, in the above table, as in compiling the foregoing, amounts due from one fund to another have been included and the operations of the Trust Fund excluded:—

Funds.	Metropolitan Area.	Country.	Total.
	£	£	£
<b>Liabilities—</b>			
Sundry creditors, including Loans outstanding and interest thereon ... ..	1,367,469	787,920	2,155,389
Debts due to Government and interest thereon ... ..	28,198	1,632,588	1,660,786
Bank overdraft ... ..	94,506	47,830	142,336
Other (including Deposits on Contracts and unexpended portion of Government grants) ... ..	17,355	93,026	110,381
Total ... ..	1,507,528	2,561,364	4,068,892
<b>Assets—</b>			
Cash in hand and Bank balances ... ..	407,902	264,811	672,713
Outstanding rates and interest ... ..	105,175	136,103	241,278
Sundry debtors ... ..	51,689	133,106	184,795
Furniture ... ..	17,494	20,221	37,715
Stores and materials ... ..	17,939	59,962	77,901
Land, building, plant, and machinery ... ..	546,600	2,745,176	3,291,776
Other ... ..	38,657	44,615	83,272
Total ... ..	1,185,456	3,403,994	4,589,450
Excess of Assets ... ..	.....	842,630	520,558
Excess of Liabilities ... ..	322,072	.....	.....

*Loans.*

Under the Local Government Act a municipality may borrow to an amount which, with existing loans, does not exceed 20 per cent. of the unimproved capital value of ratable lands. If any municipality has exceeded the statutory maximum it cannot borrow further until the total amount owing falls below the limit.

The total amount of loans raised during 1920 was £1,532,374, including £929,300 borrowed by the City of Sydney, £473,450 by metropolitan, and £129,624 by country municipalities; while the sinking funds of the City of Sydney were increased by £106,516, those of metropolitan and country municipalities were decreased by £12,060 and £2,866 respectively, due to the application of the funds in redemption of the loans. Apart from the liability to the State under the Country Towns Water and Sewerage Act, the total amount of loans outstanding at the close of the year was £9,792,725, and towards this amount there was at the credit of the sinking funds a sum of £950,581.

Rates of interest ranged from  $3\frac{1}{2}$  per cent., which was carried by £179,147 to 7 per cent., which, however, was payable only on £160, and the amount paid and due as interest on loans during the year was £395,907. The total indebtedness was £9,792,725, bearing an average rate of interest of 4.04 per cent., viz., 4.11 per cent. on the loans of the City of Sydney, 3.49 per cent. on those of the metropolitan municipalities, and 4.19 per cent. on those of the country municipalities.

The average rate of interest payable on all loans is hardly, however, an index of the true value of municipal debentures to the investors, as out of a total debt of £9,792,725, the sum of £4,300,438 pays interest at 4 per cent., and £2,124,400 at  $3\frac{7}{8}$  per cent., and of these amounts the metropolitan municipalities are responsible for £4,253,549 at 4 per cent., and the whole floated at  $3\frac{7}{8}$  per cent. The country municipalities borrowed £250,450 at  $4\frac{1}{2}$  per cent., £93,990 at 5 per cent., and £81,898 at 6 per cent.

The total debt per head of population in municipalities on 31st December, 1920, amounted to £6 19s. 3d., without allowance being made for sinking funds, while the yearly charge for interest is 5s. 8d. per head. These sums, compared with the resources of the municipalities, appear by no means formidable. The amount of indebtedness per head in previous periods was as follows:—

	£	s.	d.
February, 1907	3	5	2
December, 1911	4	17	6
December, 1916	7	1	1

The following are the outstanding loans on 31st December, 1920, and the sinking funds set apart to meet them; the New South Wales figures include £4,814 raised in Victoria:—

Division.	Municipal Loans Outstanding.			Sinking Funds.	Interest paid and due on Loans, 1920.
	New South Wales.	London.	Total.		
	£	£	£	£	£
Sydney—City	7,497,690	500,000	7,997,690	938,544	328,932
„ Other Metropolitan	1,180,334	...	1,180,334	4,513	41,225
Country	596,801	17,900	614,701	12,524	25,750
Total	£ 9,274,825	517,900	9,792,725	950,581	395,907

Temporary loans, amounting altogether to £31,885, which bear interest at current bank rates, and loans payable on demand amounting to £78,646, are included in the above table.

The loans are redeemable at various periods after 1920, and the amount to be repaid in London is £517,900, or about 5·3 per cent. of the total, and the amount of debentures held locally is £9,274,825.

#### SHIRES.

On the 1st January, 1907, 134 shires worked under the Local Government Act, 1906, but the number has since been raised to 136. These shires are all in the Eastern and Central Land Division, 98 being in the former, and 38 in the latter.

The shires vary in area from 36 square miles in Ku-ring-gai, immediately north of the City of Sydney, to 5,736 square miles in Lachlan, the headquarters of which are at Condobolin, and the smallest shires are in the most closely settled parts of the State.

A general rate, not less than 1d. in the £, and not more than 2d. in the £, may be levied by shires on the unimproved capital value of all ratable land. If, however, the general rate of 1d. is more than sufficient to meet requirements it may be reduced, and in 1920 five shires levied a general rate less than 1d.

In many shires the general rate was not sufficient to meet the requirements, and the State granted subsidies in these cases. As already stated, endowments are fixed every third year, and are determined according to the extent of the shire, the probable revenue from a rate of 1d. in the £, the necessary expenditure, the extent of roads and other public works to be constructed and maintained, and other matters. The statutory sum of £150,000 granted to shires under the Local Government Act was allotted for the three years, commencing on the 1st January, 1922, as follows:—

58 shires received no endowment.

8 shires received from £280 to £400.

5       "       "       £650   ,,   £700.

9       "       "       £750   ,,   £900.

10      "       "       £920   ,,   £1,200.

7       "       "       £1,250   ,,   £1,500.

11      "       "       £1,600   ,,   £2,000.

14      "       "       £2,100   ,,   £2,880.

12      "       "       £3,260   ,,   £5,000.

2       "       "       £7,000 each.

As a general rule, the highest amounts were allowed to the areas on the North Coast, and the shires which received £7,000 were Dorriggo and Tweed.

In 1920 the Government paid £156,429 as endowment to the shires, and a further sum of £168,022 was paid as grants for special purposes, making the total subvention from the State £324,451.

*Expenditure.*

The following statement shows the expenditure of shires during 1920 in comparison with the year 1908.—

Particulars.	1908.		1920.	
	Expenditure.	Per cent.	Expenditure.	Per cent.
	£		£	
General Fund—				
Administrative expenses ... ..	116,932	17·7	146,762	11·1
Public works ... ..	516,072	78·7	994,731	75·0
Health administration ... ..	4,604	0·7	84,282	6·4
Public services ... ..	11,703	1·8	26,239	2·0
Shire property ... ..	397	0·1	14,935	1·1
Miscellaneous ... ..	6,453	1·0	8,589	0·6
Special and local funds ... ..	58	...	43,980	3·3
Trading Accounts ... ..	...	...	6,230	0·5
Total Expenditure ... ..	£ 656,219	100·0	1,325,748	100·0

In the General Fund, of the amount spent on works, £60,637 represent the cost of supervision (salaries of engineers, &c.); £28,908 were for sundry expenses; and the actual amount spent on maintenance and construction was £905,186. The expenditure on public works, such as roads, streets, footpaths, bridges, and ferries, etc., represented 75 per cent. of the total.

The higher ratio of the cost of health administration in 1920 is accounted for by the fact that the sanitary services are now administered by the General Fund, and not by a separate Special or Local Fund as was previously the case.

The total receipts from all sources were £1,355,416, and as the administrative expenses, as already stated, amounted to £146,762, the cost of collection was to 10·8 per cent.

*Income.*

The principal heads of income of shires in 1920 were as follow, and for purposes of comparison the 1908 figures are attached :—

Particulars.	1908.		1920.	
	Income.	Per cent.	Income.	Per cent.
	£		£	
General Fund—				
General rates (including extra charges)	382,336	61·0	825,781	60·9
Government endowment ... ..	162,859	26·0	156,429	11·5
Public works ... ..	65,781	10·5	196,045	14·5
Health administration ... ..	2,979	0·5	79,410	5·8
Public services ... ..	7,038	1·1	14,630	1·1
Shire property ... ..	517	0·1	13,456	1·0
Miscellaneous ... ..	4,198	0·7	12,125	0·9
Special and local funds ... ..	1,160	0·1	49,345	3·7
Trading Accounts ... ..	.....	...	7,695	0·6
Total Income ... ..	£ 626,868	100·0	1,555,416	100·0

The income from public works in 1920 increased largely compared with 1908, owing to the fact that the Government grants in aid of roads, streets, bridges, etc., in the last-mentioned year, were very large. The greater revenue from Government endowment in 1908 is due to the higher rates granted in the earlier years.



Of the total income in 1920, Government assistance, exclusive of grants for special purposes, provided 11·5 per cent., as against 26·0 per cent. in 1908. The principal item in the receipts on account of public works was Government grants, which amounted to £165,506, while the same source was responsible for £891 received for health administration. The total assistance received from the Government in 1920 amounted to £324,451, or 23·9 per cent. of the total income. Compared with 1908 there has been a large expansion in the Special and Local Funds, but, as was noticed with reference to the expenditure of municipalities, the sanitary services are now administered by the General Fund, and this would account for the higher ratio of health administration receipts to total income.

*Balance-sheet.*

The financial position of the shires on 31st December, 1920, was strong, as there was an excess of assets of £405,044. The combined balance-sheet of the shires on 31st December, 1920, appears as follows :—

Liabilities.				Assets.			
£				£			
General Fund	...	...	206,120	General Fund	...	...	589,154
Special or Local Funds	...	...	30,544	Special or Local Funds	...	...	48,503
Trading Accounts	...	...	21,497	Trading Accounts	...	...	25,548
Total, all Funds...							
	...	...	£258,161		...	...	
Excess of Assets	...	...	405,044		...	...	
Total				Total			
	...	...	£663,205		...	...	£663,205

The figures in the preceding table include amounts due from one fund to another, but in the following table, which serves to indicate the nature of the liabilities and assets of the shires, only the net liabilities and assets are taken into account; the Trust Fund is included in the following but excluded from the preceding table; the gross totals, therefore, do not agree :—

Liabilities.				Assets.			
£				£			
Sundry Creditors (including Loans outstanding and interest thereon)	...	...	173,715	Cash in hand and bank balances	...	...	212,760
Bank overdraft	...	...	59,175	Outstanding rates and interest	...	...	95,335
Other (including deposits on Contracts and unexpended portion of Government grants)	...	...	112,255	Sundry debtors	...	...	36,354
Excess of Assets	...	...	405,044	Furniture	...	...	15,822
Total				Stores and materials	...	...	23,705
	...	...	750,189	Land, buildings, plant, and machinery	...	...	362,866
	...	...		Other	...	...	3,347
	...	...		Total			
	...	...			...	...	750,189

*Loans.*

The Local Government Act, 1919, empowers Shire Councils to borrow money, not exceeding in the aggregate a sum equal to thrice the amount of

the annual income. The loans may be secured and charged upon the income of the general funds of the shire, and are repayable in annual or half-yearly instalments of principal and interest. At the 31st December, 1920, the amount of loans outstanding, including temporary loans, was £61,914.

The following are some particulars regarding the loans of shires at the end of 1920, from which it will be seen that the indebtedness is very small compared with the resources :—

Amount of Loans outstanding—						£	£
Ordinary	...	...	...	...	...	42,216	
Temporary	...	...	...	...	...	19,698	
Total							61,914
Total amount of Sinking Fund							680
Floated in 1920	...	...	...	...	...		13,200
Interest due in 1920	...	...	...	...	...		2,243

The interest payable during 1920 amounted to £2,243, the rates of interest paid varying from  $4\frac{1}{2}$  to 7 per cent. If loans amounting to £12,418 (mainly loans of a temporary character) be deducted from the total loans outstanding, on account of the rate of interest payable not being defined, the average rate of interest payable was 5·68 per cent.

The total indebtedness per head of the population in the shires amounted to 1s. 10d. only, while the yearly charge for interest was approximately 1d. per head, and the debt per head in 1916 was 4s. 9d., but corresponding particulars relating to previous periods are not available.

The whole of the loans were raised within New South Wales, and are redeemable at various periods from 1921 to 1935.

#### WATER SUPPLY FOR COUNTRY TOWNS.

The Country Towns Water Supply and Sewerage Acts of 1880, 1894, and 1905 were passed with the object of assisting councils to construct general systems of water supply and sewerage. These Acts were repealed by the Local Government Act of 1919, but all liabilities to the Government incurred under the former Acts are not affected, and all by-laws made are still in force. At the end of June, 1921, fifty-five municipal councils and one shire had availed themselves of the privilege offered as regards the water service, and works were under construction in other municipalities.

The amount required for carrying out the works is advanced by the State. The Council, however, has the option of supervising and constructing the works, failing which the Government undertakes these duties. The sum advanced is repayable by instalments, with interest on the unpaid balances at a rate to be fixed; the first payment is required to be made twelve months after the date of the transfer of the works, and the number of yearly repayments limited to a maximum of 100. The Act also provides for the issue of licenses, for the recovery of rates, for making by-laws for the assessment of lands, and for other purposes. The total amount of debts owing by municipalities on water works at the 30th June, 1921 was £1,428,435, and the aggregate annual instalment repayable was £55,306. The last-mentioned sum is approximate only, as in a few cases the payment has not been definitely fixed.

The combined revenue accounts of the municipalities and shires which maintain waterworks, for the year ended 31st December, 1920, are shown below :—

Expenditure.	Municipalities.	Shires.	Income.	Municipalities.	Shires.
	£	£		£	£
Management ... ..	21,879	34	Rates levied ... ..	93,622	500
Working and maintenance	65,707	785	Rents (Meter and other) ..	2,003	...
Interest payable to Government ... ..	44,021	230	Water sales. ... ..	37,104	647
Other ... ..	3,269	...	Garden charges, &c. ...	9,933	345
Balance ... ..	7,786	443			
Total ... ..	£ 142,662	1,492	Total ... ..	£ 142,662	1,492

With regard to the expenditure, management charges accounted for 16·1 per cent., working and maintenance for 48·9 per cent., interest payable to Government 32·6 per cent., and miscellaneous items 2·4 per cent.

The income figures show that rates contributed 65·3 per cent of the receipts, rents 1·4 per cent., water sales 26·2 per cent., and garden charges, etc., 7·1 per cent.

The combined balance-sheet on 31st December, 1920, was as follows :—

Liabilities.	Municipalities.	Shires.	Assets.	Municipalities.	Shires.
	£	£		£	£
Capital Debt due to Government... ..	1,177,833	5,873	Waterworks—plant, buildings, &c. ... ..	1,271,092	8,339
Interest due to Government ... ..	44,859	4	Outstanding rates ... ..	21,658	161
Sundry creditors ... ..	53,015	614	Bank balances, fixed deposits, and cash in hand	51,355	161
Excess of Assets ... ..	107,480	2,271	Stores and materials ...	7,174	1
			Sundry debtors ... ..	31,908	100
Total ... ..	£ 1,383,187	8,762	Total... ..	£ 1,383,187	8,762

The total amount advanced by the Government practically represents the present value of the services. The amount of rates outstanding on the date mentioned was £21,819, while the bank balances, cash in hand, investment in war loans, and fixed deposits were £51,516.

The above figures are exclusive of the Grafton and South Grafton Waterworks, which are controlled by a corporate board, and whose transactions are shown separately on page

#### SEWERAGE AND DRAINAGE WORKS.

Only twenty municipal councils have taken advantage of the Act providing for the construction of sewerage and drainage works in country towns, and the capital debt and annual repayments on 30th June, 1921, were £505,896 and £17,820 respectively. Other sewerage systems are in existence in several places; but they have been constructed apart from the Act, and, with few exceptions, the operations have been on a minor scale.

Some of the municipalities do not levy special sewerage rates, and therefore do not keep a separate account. The revenue accounts of the other municipalities for the year ended 31st December, 1920, are shown below :—

Expenditure.				Income.			
			£				£
Management	...	...	5,847	Rates levied	...	...	32,982
Working and maintenance	...	...	9,304	Other	...	...	7,286
Interest payable to Government	...	...	14,785				
Other	...	...	5,573				
Balance	...	...	4,759				
Total	...	...	£40,268	Total	...	...	£40,268

Practically the only source of income is from rates, the other receipts representing contributions to works, sales of fittings, etc. Of the expenditure, management charges represented 16·5 per cent., working and maintenance 26·2 per cent., interest payable to Government 41·6 per cent., and other expenses 15·7 per cent.

The combined balance-sheet was as follows :—

Liabilities.				Assets.			
			£				£
Capital Debt due to Government	...	...	394,467	Works and Plant	...	...	394,818
Interest due to Government	...	...	10,523	Outstanding rates	...	...	5,904
Sundry creditors	...	...	5,584	Bank balance and cash	...	...	18,074
Excess of Assets	...	...	19,479	Stores and materials	...	...	2,963
				Sundry debtors	...	...	8,294
Total	...	...	£430,053	Total	...	...	£430,053

#### DRAINAGE TRUSTS.

In addition to the water and sewerage works shown in the foregoing tables, thirty-three trusts for reclamation of swamp and other lands were in operation on the 30th June, 1921, with a total length of 123 miles, the total area served being 134,273 acres. The total cost as gazetted was £118,862, and the annual payments were £6,960. The owners of the lands improved by these works are responsible for the repayment of the capital expenditure, and are also required to provide for the cost of maintenance and administration.

#### GAS-WORKS.

The Local Government Act authorises the construction of works for public lighting, and enables municipalities to provide private consumers with gas. In addition to twenty-one municipalities supplying coal-gas, acetylene and other gas plants have been established in other municipalities.

The operations of the municipalities with coal gasworks in 1920 will be seen from the subjoined statements showing the Gasworks Trading Undertaking revenue account and balance-sheet.

The following is the revenue account, and particulars for 1908 are appended for purposes of comparison :—

Expenditure.	1908.	1920.	Income.	1908.	1920.
	£	£		£	£
Manufacture ... ..	22,714	80,485	Private lighting ...	33,867	96,103
Distribution ... ..	1,525	9,227	Public lighting ...	7,652	14,501
Management expenses	3,904	21,853	Sale of residual pro-		
Public lighting ... ..	1,700	5,615	ducts ... ..	4,142	10,930
Other ... ..	2,457	6,593	Other ... ..	1,742	1,153
Balance ... ..	15,103	.....	Balance ... ..	.....	1,086
Total ... ..	£ 47,403	123,773	Total ... ..	£ 47,403	123,773

On the total operations for 1920 there was a gross loss of £1,086. Eight municipalities made a loss on trading, and even where the undertaking was carried on at a profit, the gain in each case was small. The manufacture of gas accounted for 65·02 per cent. of the expenditure, as compared with 70·2 per cent. in 1908, and private lighting for 78·33 per cent. of the income, as against 71·5 per cent. in 1908.

The following is an analysis of the total expenditure in 1920, according to the total quantity of gas sold. The prices charged to private consumers ranged from 3s. 9·6d. to 11s. 3·8d. per thousand cubic feet, being, on the average, 5s. 11·9d. per thousand cubic feet.

Expenditure per 1,000 cubic feet Sold.

	s.	d.
Manufacture ... ..	4	5·7
Distribution... ..	0	6·2
Management and general expenses, including depre-		
ciation ... ..	1	2·6
Public lighting ... ..	0	3·8
Interest on loans and overdrafts... ..	0	3·8
Other ... ..	0	0·6
Total ... ..	6	10·7

The operations shown in the Net Revenue Appropriation Account resulted in the loss on trading being converted into a profit on the whole gasworks undertakings of the municipalities of £436. This was due mainly to the receipt of the loan rates, which amounted to £2,601. The credit balance carried forward on this account was £38,678.

The balance-sheet of the Gasworks Trading Undertakings for 1920 is given below :—

Liabilities.	Assets.
Sundry creditors ... ..	Buildings, land, stock, plant, &c. 288,575
Loans and overdrafts, including	Sundry debtors, including amounts
interest accrued due ... ..	due from other funds ... ..
Reserves ... ..	Fixed deposits ... ..
Excess of Assets ... ..	Investments, Bank balance, and
	cash ... ..
Total ... ..	Total ... ..

The total excess of assets amounted to £164,659, to which each municipality, with two exceptions, contributed.

## ELECTRICITY WORKS.

The following municipal councils have erected electric lighting plants :— Sydney, Manly, Albury, Broken Hill, Corowa, Fairfield, Goulburn, Inverell, Junee, Maitland West, Moss Vale, Murrumburrah, Murwillumbah, Narrabri, Narrandera, Newcastle, Penrith, Queanbeyan, Quirindi, Tamworth, Temora, Tenterfield, Wagga Wagga, Wollongong, and Young. The shires of Bland, Bulli, Crookwell, and Lake Macquarie have also established electric lighting plants.

The following statement shows the results of the trading operations of the electricity works during 1920 in respect of the municipalities and shires mentioned above, with the exception of the City of Sydney electric lighting undertaking, which has already been dealt with. The figures for municipalities in 1908 are included for comparative purposes.

Income.	Municipalities.		Shires.	Expenditure.	Municipalities.		Shires.
	1908.	1920.	1920.		1908.	1920.	1920.
	£	£	£		£	£	£
Private lighting ...	6,779	67,987	4,852	Generation ...	6,878	77,533	2,583
Public lighting ...	9,366	13,065	1,583	Distribution ...	1,468	10,285	508
Power supply ...	504	49,624	281	Management, &c.	943	26,099	2,173
Rents of meters,				Public lighting ...	690	2,855	377
&c. ...	133	5,011	235	Other ...	3,421	13,194	588
Other ...	1,819	3,505	229	Balance ...	5,201	9,226	951
Total...	18,601	139,192	7,180	Total...	18,601	139,192	7,180

Generation of electricity is the largest item of expenditure, accounting in 1920 for 58·8 per cent. of the whole. Distribution of the current cost 7·9 per cent., management 20·8 per cent., and other expenses 12·5 per cent. The gross profit of these concerns to the combined municipalities and shires was £10,177, which amount was transferred to the Net Revenue Appropriation Account. From this account £4,686 were transferred to Sinking Fund and Reserves, and other expenses totalled £493; £12,795 were received on account of rates, and other receipts amounted to £1,070, leaving a net profit of £18,863.

Setting out the expenditure in 1920 on the basis of the total units sold, the following result is obtained :—

Item.	Municipalities.	Shires.
	pence.	pence.
Generation ...	1·47	2·11
Distribution ...	0·19	0·44
Management, general, depreciation, &c. ...	0·48	1·86
Public lighting ...	0·06	0·32
Interest on loans and overdraft ...	0·15	0·33
Other, including bad debts written off ...	0·06	0·16
Total ...	2·41	5·22

The figures for the shires are much higher than those for the municipalities; this is attributable to the fact that the municipalities are operating on a larger scale than the shires, with a consequent lessening of manufacturing costs.

The average price per unit charged to consumers in municipalities for lighting was 5·43d., and for power 1·34d.; the corresponding figures for shires were 5·98d. and 2·38d.

The balance-sheet of the Trading Funds for 1920 was as follows :—

Liabilities.	Municipalities.	Shires.	Assets.	Municipalities.	Shires.
	£	£		£	£
Sundry creditors ...	26,561	6,583	Materials, stock, &c. ...	295,212	21,524
Loans and overdrafts ...	256,064	14,914	Sundry debtors ...	41,888	2,024
Reserves... ..	19,237	.....	Fixed deposits, bank		
Excess of assets...	130,701	4,051	balance, and cash...	95,463	2,000
Total ... ..	432,563	25,548	Total ... ..	432,563	25,548

Only six municipalities and one shire showed an excess of liabilities, small in each case, and the position is therefore satisfactory.

The St. George County Council has undertaken the establishment of an electric scheme for the service of the contributing municipalities of Kogarah, Hurstville, Rockdale, and Bexley. During the year 1920 the scheme was only in its preliminary stages, and trading operations had not been commenced.

#### BOARDS AND TRUSTS.

In addition to the ordinary forms of municipal local government, there are various boards and trusts with local jurisdiction. The control of the water supply and sewerage of the Metropolitan and Hunter districts is placed under separate Boards. The Metropolitan and the Country Towns Water Supply and Sewerage Acts, the Fire Brigades Act, the Sydney Harbour Trust Act, the Metropolitan Traffic Act, and the Motor Traffic Act, were all passed with the object of extending the principle of local government, and Boards have been established to carry out the provisions of some of these Acts.

The Metropolitan Board of Water Supply and Sewerage was established in 1887, the Hunter District Board in 1892, and the Sydney Harbour Trust in the year 1900.

In 1900 the Metropolitan Traffic Act was passed, which gives the complete control of street traffic and the licensing of public vehicles, drivers, and conductors to the Inspector-General of Police, and the Motor Traffic Act of 1909 places the supervision of motor vehicles under the same authority. Further information regarding licenses and fees is published in the chapter of this Year Book treating of "Police and Prison Services."

#### BOARD OF FIRE COMMISSIONERS.

The Fire Brigades Act, 1909, which repealed the Act of 1902, applies to the City of Sydney, to forty-seven Metropolitan municipalities, to eighty-five country municipalities, and to parts of twelve shires, and the operations of the board may be extended to other districts by proclamation. At the end of 1921 the districts embracing the municipalities and shires numbered eighty-five. Particulars relating to the financial transactions of the board will be found in the chapter of this publication dealing with "Private Finance."

The calls attended during 1921 numbered 1,936, of which 1,385 were in the Sydney district. Particulars are shown below :—

Calls.	Sydney District.	Country Districts.	Total.
False alarms ... ..	256	52	308
Chimney alarms ... ..	24	16	40
Fires—Slight ... ..	1,049	402	1,451
„ Serious ... ..	17	2	19
„ Total destruction...	39	79	118
Total ... ..	1,385	551	1,936

#### METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE.

In March, 1888, the Government passed an Act establishing a Board of Administration, under the title of the Metropolitan Board of Water Supply and Sewerage, to regulate the water supply and sewerage services in the county of Cumberland, including those under the control of the City Council. The management of the water service was transferred to the Board in May, 1888, and of the sewerage in September, 1889. The total length of water mains taken over was 355 miles, and on 30th June, 1921, this had increased to 2,882 miles. There were 70½ miles of sewers in 1889, lengthened to 1,197 miles of sewers, and 64 miles of stormwater drains in 1921.

The Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities within the county of Cumberland supplied with water. The Board is subject to the general control of the Minister for Works—a provision considered necessary, as the Government advances the whole of the money for the construction of the works, the amount so advanced constituting part of the public debt of the State.

#### METROPOLITAN WATER SUPPLY.

As early as 1850 authority was given by the Legislative Council to the City Corporation for the construction of water and sewerage works, and a system of water supply from the Lachlan, Bunnerong, and Botany Swamps was adopted. This service has since been superseded by the Upper Nepean system.

The sources of supply under the existing system are the waters of the Nepean, Cataract, and Cordeaux Rivers, draining an area of 347 square miles, a catchment enjoying a copious and regular rainfall. The off-take works are built at a height of 437 feet above the level of the sea, and the water flows by means of tunnel, open canal, and wrought-iron aqueducts to Prospect Reservoir, a distance of 40 miles from the farthest source of supply. The conduits above Prospect Reservoir have a maximum delivery of 150,000,000 gallons per day, and for 10 miles below this reservoir the capacity of the canals and pipes is 50,000,000 gallons. For the last 11 miles the water is conveyed by two 48-inch mains. In this work there are 63½ miles of tunnels, canals, and pipes.

Notwithstanding the size of Prospect Reservoir, it was found in 1902—a very dry year—that the supply was not sufficient for the growing needs



of the Metropolis. The Government therefore decided to build the Cataract Dam, which was completed in 1908, the catchment area above the dam being about 50 square miles. The water flows from this dam down the Cataract River to a weir at Broughton's Pass, where it enters a tunnel previously existing, and is conveyed by a system of open canals to the Prospect Reservoir. The total distance from Cataract to Sydney, *via* Prospect, is 66½ miles.

In addition to the works referred to, further contracts have been made especially with regard to the completion of the Cordeaux and other dams, and extensions and duplications of existing mains, which will considerably benefit the existing supplies, especially the Western Suburbs and Manly systems.

The dimensions of the Prospect and Cataract reservoirs are as in the following statement:—

Dam.			Height above Sea-level.	Area.	Capacity.	Length of Dam.	Width at top.	Height.
			ft.	acres.	gallons.	ft.	ft.	ft.
Prospect	...	...	196·7	1,266½	11,029,180,000*	7,300	30	85½
Cataract	...	...	950	2,200	20,743,196,475	811	16½	160

\* When full, about half this quantity is available by gravitation.

From Prospect the water flows 5 miles by open canal to the Pipe Head Basin, thence 5 miles by 6-foot wrought-iron and steel pipes to the Potts' Hill Balance Reservoir, which has a capacity of about 100,000,000 gallons, and covers 24½ acres. This reservoir was designed to tide over any interruptions in the supply from Prospect, as well as to prevent fluctuation at the head of pressure. A by-pass is laid along the floor to enable mains to deliver water to Sydney direct.

At Potts' Hill the water passes through a series of copper-gauze screens, and is then conducted by two 48-inch mains and three smaller mains to the reticulated area south of Port Jackson. At Lewisham a bifurcation takes place in one of the 48-inch mains, one branch supplying the Petersham Reservoir, the other continuing to Crown-street. The Petersham Reservoir is 166 feet above high-water mark, is built of brick, and has a capacity of 2,157,000 gallons. The other 48-inch main, laid in 1893, delivers water direct from Potts' Hill to Crown-street. These two trunk mains are connected at Petersham as an intermediate spot. The Crown-street Reservoir is 2½ miles from Prospect. It is of brick, and contains 3,250,000 gallons, the top water-level being 141 feet above high-water mark.

On account of the elevation of parts of the reticulated area, pumping is necessary for the purpose of supplying the upper zones, and no less than 11,092,000,000 gallons were raised at the various stations during the twelve months ended June, 1921, representing 64 per cent. of the total supplied. At Crown-street is situated the main pumping station, where are erected three sets of compound high-duty pumping engines. A covered reservoir, of a capacity of 18,500,000 gallons, has been constructed in the Centennial Park at a height of 245 feet, for the purpose of ensuring a larger bulk of water

within the city limits. At Ashfield there is a wrought-iron tank at an elevation of 223 feet above high water, with a capacity of 1,000,000 gallons. This tank is supplied from the Centennial Park Reservoir by a main, and provides for the higher part of the district. Vacluse Reservoir, at a height of 313 feet, is connected with Waverley, and supplies a district of about 1,200 acres around Vacluse and South Head. It has a diameter of 107 feet, a depth of 18 feet, and its capacity is 1,000,000 gallons. The No. 1 reservoir at Waverley has a capacity of 1,087,000 gallons; and the new reservoir erected in the Waverley Park, and occupying the highest point in the eastern suburbs of Sydney, has a capacity of 4,260,000 gallons; and surmounted on this structure, at an elevation of 396 feet above sea-level, is a smaller reservoir of 500,000 gallons capacity, for the service of residents in the high zone of the immediate vicinity.

North Sydney receives its supply from Potts' Hill, *via* Ryde, where there is a reservoir containing 2,000,000 gallons, from which the water is pumped into a 1,000,000-gallon tank at Ryde village, 234 feet above sea-level, and, by a continuation of the same main, into a pair of tanks, of a joint capacity of 3,000,000 gallons, at Chatswood, at an elevation of 370 feet above high-water mark. Water can be lifted direct from Ryde to Wahroonga and Pymble, or may be re-pumped from Chatswood, where a small pumping station has been erected. There are three tanks (one of them being of 1,000,000 gallons, one of 250,000 gallons, and one of 40,000 gallons capacity) at Wahroonga,  $7\frac{1}{2}$  miles distant, whence the water flows as far as Hornsby (13 miles to the north-west of Port Jackson), where there is a tank of 1,000,000 gallons capacity. At a height of 567 feet a concrete reservoir of a capacity of 500,000 gallons has been constructed at Pymble, and during 1917 a second reservoir with a capacity of 6,905,160 gallons was brought into operation. From these reservoirs the districts between Pymble and Chatswood are served, thus reducing the abnormal pressure by reason of the supply being from so great a height as Wahroonga.

From the Ryde tank the districts of Ryde, Gladesville, and Hunter's Hill are supplied; while a 9-inch main extends over the Parramatta and Iron Cove bridges to supply Balmain, at which suburb there is now a reservoir with a storage capacity of 2,376,250 gallons. An elevated tank, at a height of 354 feet, with a capacity of 72,800 gallons, and a reservoir, with a capacity of 1,925,000 gallons, 302 feet above sea-level, have been erected at Mosman.

The districts of Campbelltown and Liverpool are supplied from the main canal by gravitation. At the latter place, a 4,000,000-gallon earthen reservoir has been constructed, and a tank with a capacity of 250,000 gallons, for the purpose of tiding over any interruption in the flow from the canal. Other districts lying nearer Sydney, *viz.*, Smithfield, Granville, Auburn, and Rookwood, are also supplied *en route*; and at Smithfield there is a 100,000-gallon concrete tank, the top water of which is 175 feet above sea-level. At Penshurst there is a tank 270 feet above sea-level, with a capacity of 1,000,000 gallons, and one 300 feet high, capable of holding 1,500,000 gallons. Works for the supply of water to the towns of Camden and Narellan, from a point on the canal near Kenny Hill, were completed in October, 1899. In 1893, the Board assumed control of the Richmond waterworks, in 1902 of the Manly works, and in 1903 of the Wollongong works. Manly is also connected with the Metropolitan system by a main from Mosman, crossing Middle Harbour.

The following statement shows the number of houses in the Metropolitan area supplied with water in 1911 and during the last five years.

Year ended 30th June.	Houses Supplied.	Average Daily Supply.	Total Supply for Year.	Average Daily Supply.	
				Per House.	Per head of population supplied.
	No.	gallons.	gallons.	gallons.	gallons.
1911	139,237	29,006,700	10,587,434,000	208	41·7
1917	193,643	39,637,128	14,467,352,000	204	40·9
1918	196,685	41,358,989	15,096,031,000	208	41·6
1919	204,308	45,557,101	16,628,342,000	223	44·6
1920	212,046	48,021,243	17,527,754,000	226	45·3
1921	221,886	48,496,033	17,701,900,000	218	43·7

From 1910 to 1917 inclusive, the water rate levied on the assessed annual value was 6d. in the £ and the meter charges were 11d. per 1,000 gallons up to 10,000,000, 10d. from 10 to 20 millions, and 9d. over 20 millions. During 1918 the first-mentioned rate was increased to 6½d., but the meter charges were not altered. During 1919 a further increase of 1d. in each case was imposed, and in 1920 the rate was still further increased to 9d. in the £ on the assessed annual value, and the charge per meter to 13d. per 1,000 gallons. The revenue from the Water Service Branch during the year ended 30th June, 1921, was £855,751, and the expenditure, including interest on capital, £821,188. The net revenue showed a return of 4·92 per cent. on the capital debt of £10,323,252.

The following statement gives the financial transactions of the Metropolitan Water Supply in 1911 and in each of the last five years; during those five years the Richmond and the Wollongong water supply systems are included.

Year ended 30th June.	Capital cost.	Revenue.	Working expendi- ture.	Interest.	Net return after paying working expenses.	Net profit after paying working expenses and interest.
	£	£	£	£	per cent.	£
1911	5,420,813	299,442	99,355	192,486	3·69	7,601
1917	7,979,124	479,290	182,087	314,659	3·72	17,456*
1918	8,472,700	523,979	195,448	343,716	3·87	15,185*
1919	8,900,391	627,287	219,322	377,886	4·58	30,079
1920	9,584,723	664,975	291,618	433,171	3·89	59,814*
1921	10,323,252	855,751	347,293	473,890	4·92	34,563

\* Loss.

#### THE HUNTER DISTRICT WATER SUPPLY.

The water supply works of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply

and Sewerage Act of 1880. In 1892, under the authority of a special Act, a Board was established on similar lines to those of the Metropolitan Water and Sewerage Board, the number of members being the same—three being nominated by the Governor, one elected by the Municipal Council of Newcastle, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following districts are within the area of the Board's jurisdiction :—

#### Municipalities—

Adamstown, Carrington, Greta, Hamilton, Lambton, New Lambton, East and West Maitland, Merewether, Morpeth, Newcastle City, Wallsend, Waratah, and Wickham.

#### Shires—

In Bolwarra Shire : Bolwarra, Lorn.

In Cessnock Shire : Aberdare, Abermain, Abermain Government, Township, Bellbird, Cessnock, South Cessnock, Church Hill, Hebburn, Heddon Greta, Homeville, Kearsley, Kurri Kurri, Mayfield, Neath, Oakhampton, Rutherford, Telarah, Weston.

In Lake Macquarie Shire : Argenton, Boolaroo, Spier's Point, Teralba, Toronto, West Wallsend.

In Tarro Shire : Hexham and Ash Island, Minmi, Morpeth Road, Pelaw Main, Stanford Merthyr, Tenambit.

The Government Railways and Tramways properties, thirteen in number, are also served by the Board.

The supply of water for the district is pumped from the Hunter River, about a mile and a half up stream from the Belmore Bridge, West Maitland. The pumping engines are situated above flood-level, on a hill about 44 chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons; also six filter-beds, 10,000 square feet each, and one of 15,000 square feet, a clear-water tank of 589,500 gallons capacity, and a storage reservoir of 172,408,100 gallons available capacity. The filtered water is pumped from the clear-water tank into two summit reservoirs, one at Rutherford and one at Buttai. The former, connected by a 10-inch and 12-inch main, with a capacity of 500,000 gallons, supplies East Maitland, West Maitland, Morpeth, Lorn, Bolwarra, Campbell's Hill, Rutherford, and neighbouring places. Buttai Reservoir is fed by two rising mains, one a riveted steel pipe, 20 $\frac{3}{4}$  inches diameter, the other a 15-inch cast-iron main, 5 $\frac{1}{2}$  miles in length; it has a capacity of 1,150,000 gallons, and supplies Newcastle and environs. Fifteen district reservoirs, which are supplied from Buttai, eleven by gravitation and four by repumping, receive water for distribution.

The present system is being augmented by the construction of a dam of 5,000,000,000 gallons capacity on the Chichester River at a point about 60 miles north from Newcastle; the water will then be conveyed by a pipe with a delivery capacity of 8,000,000 gallons per day to the Buttai Reservoir. The completion of these works will assure to the people of Newcastle and district an ample supply of water of excellent quality for many years to come. The length of the mains when the Board was established was 106 miles; at 30th June, 1921, it had been increased to 464 miles.

Particulars relating to the water supply of the Board for 1911 and the past five years are given below. A water rate of 10d. in the £ is payable on the assessed annual value of all properties over £12, but if valued at less than £12, the rate is 10s. per annum. The charge by meter is 2s. per 1,000 gallons

and extra charges are made for water used for other than domestic purposes, the rates on which services range from 10s. to 40s. per annum.

Year ended 30th June.	Properties Supplied.	Supply.		Average Daily Supply	
		Daily average.	Total.	Per Property.	Per Head.
	No.	gallons.	gallons.	gallons.	gallons.
1911	17,164	1 949,900	675,214,000	108	21·5
1917	22,604	3,435,336	1,253,898,000	152	30·3
1918	23,257	3,442,816	1,256,628,000	148	29·6
1919	24,079	4,065,223	1,483,807,000	169	33·8
1920	24,864	4,319,414	1,580,906,000	174	34·7
1921	25,874	4,688,183	1,711,187,000	181	36·0

The funds necessary for the maintenance and management of the water supply and sewerage services, as well as the sum required to pay interest on the capital debt, are obtained by rates levied on the properties situated in the districts benefited by the systems. The valuations adopted by the Municipal Councils are generally accepted by the Boards as the values on which to strike their special rates. In cases of heavy consumption of water, a charge is made according to the quantity used; but fixed charges are imposed for the use of water in certain trades and callings, for gardens, and for animals. The following table shows the financial position for 1911 and the last five years:—

Year ended 30th June.	Estimated Capital Debt.	Revenue.	Expenditure.*	Return on Estimated Capital Debt.
	£	£	£	per cent.
1911	495,747	45,711	45,420	3·55
1917	704,305	78,040	64,434	5·44
1918	832,064	80,607	69,933	4·43
1919	939,685	91,204	76,297	4·76
1920	1,045,504	97,469	88,488	3·98
1921	1,472,074	116,320	106,194	3·10

\* Including Interest and Instalments to Sinking Funds for Renewal of Works.

#### METROPOLITAN SEWERAGE WORKS.

The first sewerage works at Sydney were begun in 1853; and in 1889, the date of transfer to the Board, there were 70½ miles of old city sewers in existence. The original scheme was designed on the "combined" system, by which street-surface water as well as sewage was removed. The works comprised five main outfalls discharging into the harbour at Blackwattle Bay, Darling Harbour, Sydney Cove, Fort Macquarie, and Woolloomooloo Bay. The pollution of the harbour, consequent on these outlets, led to the appointment of a Commission of Inquiry, and the result was the adoption of the present system.

This system consists of three main outfalls—the northern, southern, and western; the northern discharges into the Pacific Ocean near Bondi, and the southern and the western discharge into the sewage farm at Webb's Grant, near Botany Bay. The northern system receives sewage from Waverley, Bondi, Woollahra, Double Bay, Darling Point, Rushcutters Bay, Elizabeth Bay, and parts of Woolloomooloo.

The southern main outfall commences at a point on the north side of Cook's River, near Botany Bay, and receives the drainage from Alexandria, Waterloo, Erskineville, Newtown, and portions of the Surry Hills district. The inlet-house, into which the sewage passes, is fitted with the latest machinery for straining the sludge, and for ejecting the fluid after filtration. Storm-water channels are also constructed at various points to carry off the superfluous water after heavy rainfalls.

The western outfall starts at a receiving chamber in the Rockdale end of the sewage farm, from which it runs to another chamber about a quarter of a mile to the north-east of Muddy Creek, and thence to a penstock chamber at Marrickville on aqueducts over Wolli Creek and Cook's River. The latter chamber receives the discharges from the eastern, northern, and western branch sewers, and drains part of Marrickville, Petersham, Stanmore, Newtown, Leichhardt, Annandale, Camperdown, Summer Hill, Ashfield, Canterbury, Enfield, Burwood, Five Dock, and Concord. A branch outfall has been constructed at Coogee, which discharges into the ocean, and serves the districts of Randwick, Kensington, and Coogee. On the northern side of the city extensive works have been completed; in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage matter; at Middle Harbour, Mosman, and Manly provision has been made for the sanitation of the districts, and a further extensive scheme is now in progress.

The length of sewers in the Metropolitan District and the houses served during 1911 and the last five years are shown below:—

Year ended 30th June.	Houses connected.	Length of Sewers.	Length of Storm-water Drains.	Length of Ventilating Shafts.	Length of Sewers Ventilated.
	No.	miles.	miles.	feet.	miles.
1911	108,012	825.20	48.85	376,900	795
1917	135,588	1,085.45	59.55	475,474	1,030
1918	139,777	1,113.34	60.07	479,464	1,039
1919	141,798	1,131.72	60.11	484,798	1,052
1920	145,304	1,161.94	63.73	503,362	1,096
1921	148,923	1,196.96	63.73	514,336	1,122

The following statement of financial transactions relates to Metropolitan Sewerage during 1911 and the last five years:—

Year ended 30th June.	Capital cost.	Revenue.	Working expendi- ture.	Interest.	Net return after paying working expenses.	Net profit(+) or loss (-) after paying working expenses and interest.
	£	£	£	£	per cent.	£
1911	4,496,290	234,208	79,636	159,070	3.43	(-) 4,498
1917	6,722,313	387,333	133,417	269,723	3.70	(-) 20,807
1918	6,870,927	429,668	147,444	283,661	4.10	(-) 1,437
1919	6,963,573	497,406	151,951	291,346	4.96	(+) 54,109
1920	7,124,813	512,621	202,360	328,239	4.39	(-) 17,978
1921	7,329,632	615,615	229,441	341,675	5.26	(+) 44,499

The sewerage rate for the city of Sydney and the eastern suburbs up to 1903 was 7d. in the £ on the assessed annual value, the northern and the western suburbs being rated at 1s., but in 1904 a uniform rate of 11d. was imposed. In 1907 it was reduced to 10d. in the £, and in 1908 to 9½d., the latter being the rate ruling up to the 30th June, 1917; on the 1st July, 1917, it was increased to 10d., and a further increase to 11d. was made on 1st July, 1918, and this rate continued during 1919, but from the 1st July, 1920, the amount levied was 12d. In addition to the sewerage rate already mentioned, storm-water drainage rates are imposed in certain proclaimed areas, the amounts ranging from ½d. to 7d. in the £ on the assessed annual value.

#### NEWCASTLE AND SUBURBS SEWERAGE WORKS.

The sewerage scheme for the Hunter District has its outfall at Merewether Gulf, some distance south from Newcastle. Two gravitation sewers which branch from the main, one at Merewether and the other in the city of Newcastle, have been completed and transferred to the control of the Hunter District Water and Sewerage Board, also the reticulation sewers for the areas capable of being drained by gravitation. The districts served so far are Newcastle, Adamstown, Hamilton, Lambton, New Lambton, Merewether, Waratah, and Wickham. The following table shows information relating to sewers under the control of the Board in 1911 and during the last five years :—

Year ended 30th June.	Properties connected.	Length of Sewers.	Ventilating Shafts.	Length of Sewers Ventilated.
	No.	miles.	No.	miles.
1911	1,465	29·91	285	17·68
1917	8,284	103·10	815	103·10
1918	9,333	117·50	819	117·50
1919	10,365	123·00	830	123·00
1920	11,338	132·90	835	132·90
1921	12,218	147·50	841	147·50

The particulars of cost, revenue, and expenditure in the same years are shown below :—

Year ended 30th June.	Capital cost— interest- bearing.	Revenue.	Working expendi- ture (including Sinking Fund).	Interest.	Net return after paying working expenses.	Net profit (+) or loss (-) after paying working expenses and interest.
	£	£	£	£	per cent.	£
1911	170,151	8,975	4,217	2,902	2·79	(+) 1,856
1917	454,638	21,408	12,051	14,512	2·05	(-) 5,155
1918	475,239	24,215	13,866	18,831	2·17	(-) 8,482
1919	514,953	26,721	14,607	20,383	2·35	(-) 8,269
1920	553,836	28,050	17,683	22,943	1·87	(-) 12,576
1921	590,790	32,164	21,256	25,328	1·84	(-) 14,420

The sewerage rate of 1s. in the £ on the annual rental value came into force on 1st January, 1909, and this was the rate ruling in 1920.

## WATER AND SEWERAGE SERVICES.

The position of the combined Water and Sewerage services of the Metropolitan and of the Hunter Districts for the five years ended 30th June, 1921, are shown below. The figures for the Metropolitan District include the Richmond and the Wollongong water supply systems, the accounts of which were both formerly kept separate, and the working expenses for the Hunter District include the instalment paid to Sinking Fund for reconstruction of renewable works.

Year ended 30th June.	Capital Cost.	Revenue.	Working Expenses.	Interest on Capital.	Net return after paying working expenses.	Net profit after paying working expenses and interest.
Metropolitan District.						
	£	£	£	£	per cent.	£
1917	14,701,437	866,623	320,504	584,382	3·71	(-)38,263
1918	15,343,627	953,648	342,892	627,377	3·98	(-)16,621
1919	15,863,964	1,124,693	371,273	669,232	4·75	84,188
1920	16,709,536	1,177,596	493,978	761,410	4·09	(-)77,792
1921	17,662,884	1,471,366	576,739	815,565	5·07	79,062
Hunter District.						
1917	1,158,943	99,448	51,746	39,251	4·12	8,451
1918	1,307,303	104,822	57,611	45,019	3·61	2,192
1919	1,454,638	117,925	61,099	50,188	3·91	6,638
1920	1,599,340	125,519	73,554	55,560	3·25	(-) 3,595
1921	2,062,864	148,484	91,894	60,884	2·74	(-) 4,294

(-) Denotes net loss.

## GRAFTON AND SOUTH GRAFTON WATER BOARD.

The Grafton and South Grafton Water Board was constituted in 1918, and although administered by the Municipalities of Grafton and South Grafton, its accounts are kept separate. During the year ended 31st December, 1920, the expenditure of the Board amounted to £4,014, of which £3,269 were interest payable on the capital debt to the Government, and the income amounted to £5,631, showing a profit of £1,617. The capital debt at the end of the year was £81,665, against which the Board held assets to the value of £87,180, other liabilities amounted to £5,515, making a total liability of £81,735. It will thus be seen that there was an excess of assets of £5,445.

## ROADS, BRIDGES, AND FERRIES.

Main roads in New South Wales were first formed to connect the towns of Parramatta, Liverpool, Windsor, and Penrith with Sydney. All access to the interior of the country was considered barred by the apparently insurmountable sandstone precipices rising on the farther side of the Nepean, and until the year 1813 no effort to cross the mountains was attended with success. In that year Blaxland, Lawson, and Wentworth succeeded in



crossing the range, and discovered the rich pastures of the Bathurst Plains. Shortly after their return the construction of a track was begun, and the Great Western road was completed as far as Bathurst on 21st January, 1815.

The access to the fertile lands surrounding Bathurst, by means of this mountain road, gave such an impetus to settlement that it was found impossible to keep pace in the matter of road-making with the demands of the settlers. The authorities, therefore, for many years confined their attention to the maintenance of roads already constructed, and extended them in the direction of the principal centres of settlement. Had the progress of settlement subsequent to 1850 been as slow as that of the preceding years, this system would have sufficed; such, however, was not the case. The discovery of gold completely altered the circumstances, and during the period of excitement and change which followed, so many new roads were opened, and traffic increased to such an extent, that the general condition of the public highways was by no means good. The modern system of road-making may be said to have begun in the year 1857, consequent on the creation of the Roads Department: it was not, however, until 1864 that the whole of the roads, both main and subordinate, received consideration by the Government.

The principal main roads are :—

Northern Road—length, 405 miles, from Morpeth to Maryland, on the Queensland border.

Western Road—length, 513 miles, from Sydney, through Bathurst, and many other important townships, to the Darling River, at Bourke.

Southern Road—length, 385 miles, from Sydney, through Goulburn, and other important townships to the Murray River to Albury.

South Coast Road—length, 250 miles from Campbelltown, through Coal Cliff, and along the South Coast generally, as far as Bega, whence it extends as a minor road to the southern limits of the State.

The roads have not so great an importance as they possessed before the opening of the railways, which for the greater part follow the direction of the main roads, and attract nearly all the through traffic. Thus many roads on which heavy expenditure has taken place have been more or less superseded, and the opening of new roads has been rendered necessary to act as feeders to the railways from outlying districts.

#### *Control of Roads and Bridges.*

Prior to 1906, when the Local Government Act came into effect, the State was divided into road districts, each of which was placed under the supervision of an officer directly responsible to the Commissioner for Roads. These officers had under their care the greater part of the roads and bridges of the State outside the incorporated areas, as well as a portion of those within such limits. The road trusts had the supervision of the expenditure of certain grants for the maintenance of roads in districts chiefly of minor importance, as well as some important roads in the vicinity of the Metropolis,

The administration of the works under the control of the Roads and Bridges Department (with the exception of those in the unincorporated areas of the Western Division, and certain bridges and ferries proclaimed as "national works") was transferred by the operation of the Local Government Act to the shires and municipal councils.

The Act authorises payments by way of endowment to municipalities and shires, the minimum endowment payable to shires being fixed at

£150,000 per annum, to be distributed in accordance with a classification made every third year. The Minister may withhold payment of endowment from a council if his requirements in respect of main roads are not satisfied.

Between 1906 and 1912 the amount of endowment allotted to shires rose from £150,000 to £360,000 approximately, but the expenditure on the important roadways has not been sufficient to maintain them in a serviceable condition. It was decided, therefore, to amend the conditions under which Government assistance is granted, by reducing the amount of general endowment, and distributing an additional sum as a special endowment for the upkeep of the main roads.

#### *Length of Roads.*

The length of roads under Government control on 30th June, 1906, prior to the transfer to the councils, was 48,311 miles, while 195 miles were under the care of road trusts, and 1,338 miles within the municipal areas were subsidised by the Government, making a total of 49,844 miles. There were also about 8,000 miles of roads and streets belonging to the municipal councils. Since 1906, statistics of roads, streets, bridges, and public ferries have been collected triennially, the date of the latest available returns being 1921. In that year the length of roads in the State was, approximately, 101,698 miles, of which 58 miles were controlled by the Government, 10,187 miles by the municipalities, 85,458 miles by the shires, and 5,995 miles were in the unincorporated areas of the Western Division. The nature of these roads may be seen in the following statement:—

Divisions.	Metalled, Gravelled, Ballasted, &c.	Formed only.	Cleared only.	Natural surface.	Total.
	miles.	miles.	miles.	miles.	miles.
National ... ..	40	16	2	...	58
Municipalities ... ..	4,474	1,912	2,162	1,639	10,187
Shires ... ..	17,216	12,200	26,538	29,504	85,458
Western Division ... ..	173	147	3,435	2,240	5,995
Total ... ..	21,903	14,275	32,137	33,383	101,698

#### *Bridges and Ferries.*

Many of the earliest bridges erected in the State were built of stone, and are still in existence. Those erected in the period following the extension of settlement to the interior were principally of timber, and have since been replaced after an average life of about twenty-five years. Nearly all the large bridges of recent date are of iron and steel, and some of them have been erected under difficult engineering conditions, owing to the peculiarity of the river flow in certain parts of the country. The Councils are now empowered to control these bridges, with the exception of those classified as National works, which may be transferred by the Government at any time to the Council.

On 1st January, 1907, the bridges of 20 feet span and over, including those in course of construction, numbered 3,575. Of these, 256 bridges, with an aggregate length of 101,416 feet, which, by reason of their cost, size, and extra-local importance, constitute a strain on the resources of the local councils, were proclaimed as "national works," to be maintained by the Government.

Where local conditions and limited traffic have not favoured the erection of a bridge, a punt or ferry has been introduced. The most important ferries which are worked otherwise than by hand, have been proclaimed as national services. Prior to 1st December, 1907, it was the practice to charge a small fee for ferry transit; but on that date tolls were abolished, and public ferries are now free.

The particulars of the bridges, culverts, and ferries of the State for the year 1920-21 are shown below:—

Classification.	Bridges over 20 feet span.		Culverts.		Ferries.
	Number.	Length.	Number.	Length.	Number.
		ft.		ft.	
National Works ... ..	283	108,631	...	...	23
Municipalities ... ..	745	41,262	4,567	243,894	26
Shires ... ..	3,627	223,126	35,287	341,770	175
Western Division (unincorporated)	99	13,602	340	4,573	6
Total ... ..	4,754	386,621	40,294	590,237	230

*Government Expenditure on Roads, Bridges, etc.*

Although the main roads have been superseded largely by the railways, they are still the sole means of communication throughout a large part of the interior, and serve as valuable feeders to the railway system. No revenue is derived directly from roads, but their indirect advantages to the country are very great.

In view of the transfer of the administration of roads and bridges, with the exception of those noted previously, from State to local government control, the following return will be of interest. It shows the Government expenditure on works of a local character, such as roads, bridges, punts, ferries, public watering-places, etc., in various periods from 1905 to 1921.

Year ended 30th June.	Expenditure on Services.	Endowments and Grants, including Main Roads.			Total Expenditure.
		Shires.	Municipalities.	Total.	
	£	£	£	£	£
1905	495,672	...	7,048	7,048	502,720
1915	175,726	288,053	40,314	328,367	504,093
1920	160,679	296,511	56,366	352,877	513,556
1921	212,407	316,180	108,353	424,533	636,940

**PARKS AND RECREATION RESERVES.**

It has always been the policy of the State to provide the residents of municipalities and shires with parks and reserves for public recreation. The city of Sydney contains within its boundaries a large extent of parks, squares, and public gardens, and suburban municipalities also are well served.

Full details regarding parks and recreation reserves in the city and suburbs of Sydney will be found in the part "Social Condition" of this volume.

In country districts, reserves have been proclaimed as temporary commons, and considerable areas have been dedicated from time to time as permanent commons attached to inland townships, which are otherwise well provided with parks and reserves within their boundaries.

## RAILWAYS AND TRAMWAYS.

THE management of the State Railways and Tramways is in the hands of a Chief Commissioner and three Assistant Commissioners, the duties of the latter being allotted by the Governor upon the recommendation of the Chief Commissioner. The third Commissionership is at present vacant.

On 26th September, 1855, the first railway line, 14 miles in length, was opened for traffic between Sydney and Parramatta, and communication was established between Newcastle and East Maitland on 11th April, 1857.

The progress in construction of the State railways of New South Wales may be traced in the table given below, the figures covering the period ending on 30th June, 1921. Included in the mileage are the Campbelltown-Camden, and Yass tramways, which are worked with the railways.

Period.	Opened during the period.	Total opened at end of period.	Period.	Opened during the period.	Total opened at end of period.
	miles.	miles.		miles.	miles.
1855-9	55	55	1895-9	205	2,706
1860-4	88	143	1900-4	575	3,281
1865-9	175	318	1905-9	342	3,623
1870-4	85	403	1910-14	344	3,967
1875-9	331	734	1915-19	858	4,825
1880-4	984	1,618	1920	190	5,015
1885-9	553	2,171	1921	28	5,043
1890-4	330	2,501			

In addition to the mileage shown above there were at 30th June, 1921, 1,005 miles of sidings and crossovers.

The progress of the State railways can be gauged fairly by comparing the population and area of territory to each mile of line open for traffic at different periods. In 1900 the average population per mile of line was 482, and in 1921 it was 414. The decrease in the area of territory to each mile of line open has been very rapid, ranging from 4,434 square miles in 1860 to 61 square miles in 1921. The following statement shows the extension of railway facilities since 1860:—

Year.	Population to each Mile of Line open.	Area to each Mile of Line open.	Year.	Population to each Mile of Line open.	Area to each Mile of Line open.
	No.	sq. miles.		No.	sq. miles.
1860	4,979	4,434	1895	501	123
1865	2,861	2,170	1900	482	110
1870	1,471	916	1905	443	95
1875	1,360	710	1910	443	85
1880	881	366	1915	455	75
1885	548	179	1920	406	62
1890	523	142	1921	414	61

## DUPLICATION OF LINES.

In addition to increasing the facilities by the construction of new lines, provision for the rapidly extending traffic is being made by the duplication of existing main lines.

Works now in progress will duplicate the western line to Orange, 196 miles from Sydney; the southern to Cootamundra, 267 miles; and the South Coast line to Wollongong, 48 miles. The northern line has been duplicated as far as Singleton, and it is intended to continue the duplication to Werris Creek.

The following statement shows the length of line laid with one or more tracks at intervals since 30th June, 1900:—

At 30th June.	Single.	Double.	Triple.	Quadruple.	Total.
	miles.	miles.	miles.	miles.	miles.
1900	2,644	158 $\frac{3}{4}$	...	8 $\frac{1}{2}$	2,811 $\frac{1}{2}$
1905	3,079 $\frac{1}{2}$	193	...	8 $\frac{1}{2}$	3,280 $\frac{3}{4}$
1910	3,393	241 $\frac{1}{4}$	...	8 $\frac{3}{4}$	3,643
1915	3,692 $\frac{1}{2}$	406 $\frac{1}{2}$	8	27 $\frac{3}{4}$ *	4,134 $\frac{1}{4}$
1920	4,405	567	7 $\frac{1}{2}$	35 $\frac{1}{2}$ *	5,015
1921	4,428	572	7 $\frac{1}{2}$	35 $\frac{1}{2}$ *	5,043

\* Includes 1 mile 9 chains with five tracks.

## RAILWAY SYSTEMS.

The railways of the State are divided into three branches, each constituting a separate system.

*Southern Lines.*

The southern system has several offshoots serving the most thickly-populated districts, and places the capital cities, Sydney, Melbourne, Adelaide, and Perth in direct communication.

Numerous branches traverse the fertile Riverina district. From Culcairn there are two branch lines, one connecting with Corowa on the Murray River, and the other with Holbrook; from The Rock a line extends to Oaklands, and from Wagga Wagga a branch to Humula has been extended to Tumbarumba, and from Henty a branch extends to the Rand. From Junee a branch runs to Narrandera, where it bifurcates, one branch extending westerly to the town of Hay and the other in a southerly direction to connect with the Victorian railways at Tocumwal. From Cootamundra a southerly branch carries the line to Tumut, while an off-shoot is being made from Gilmore to Batlow; another branch, in a north-westerly direction, carries the line through Temora and Wyalong to Cudgellico, and a branch is under construction from Barmedman to Rankin's Springs. A branch line from Temora extends to Griffith, in the Murrumbidgee Irrigation Area, and a line connecting Griffith with Yanko and Hillston is being laid. From Stockinbingal, between Cootamundra and Temora, a cross-country line connects with the western system at Forbes.

From Murrumburrah a branch has been constructed to Blayney, on the western line, and from Koorawatha, on this connecting line, a branch joins

Grenfell with the railway system, and there is a branch line from Cowra to Canowindra, which is being extended to Eugowra. From Galong there is a branch to Burrowa.

Nearer the metropolis, a branch from Goulburn to Nimmitabel and Bombala brings the rich pastoral district of Monaro into direct communication with the metropolis. From Goulburn also a branch line has been opened to Crookwell.

A small offshoot from the main southern line joins Campbelltown with Camden, and on the main suburban section of the southern system there are branch lines from Clyde to Carlingford, and from Lidcombe to Regent's Park.

The South Coast, or Illawarra line, which forms part of the southern system, has been constructed to Bomaderry (Nowra), connecting the metropolis with the coastal district of Illawarra, which is rich in coal and contributes largely to the milk supply of the metropolis. From the Illawarra line a branch extends between Sydenham and Bankstown, with Liverpool as the objective.

#### *Western Lines.*

The western system of railways extends from Sydney over the Blue Mountains, and has its terminus at Bourke, a distance of 511 miles. Leaving the mountains, the western line throws out a branch from Wallerawang to Mudgee and Coonabarabran, which is being extended to join the north-western branch of the northern system at Burren Junction, and enters the Bathurst Plains, connecting with the metropolis the rich agricultural lands of the Bathurst, Orange, and Wellington districts.

At Blayney, as before stated, the western line is joined with the southern system by a branch line to Murrumburrah; from Orange a branch runs through Parkes to Condobolin; an extension from Condobolin to Broken Hill, a distance of 373 miles, has been commenced, and has been completed as far as Trida. A section from Menindee to Broken Hill has been laid. At Bogan Gate a branch line has been opened to Tottenham with two short extensions to the Mount Royal Mine and the Caroline Mine. Further west, branch lines extend from Dubbo to Coonamble, from Nevertire to Warren, and from Nyngan to the important mining district of Cobar. A line joining Dubbo with Molong is being laid. There is a connecting line from Narromine, on the main western line, *via* Parkes to Forbes, which is connected with Stockiubingal on the southern line. From Byrock a line branches off to Brewarrina. A line from Dubbo connects with the Wallerawang-Coonabarabran branch at Merrygoen, and a connecting line between this branch and the main northern line is under construction.

The western system includes also a short line from Blacktown to Windsor and Richmond, and a branch has been built from Craboon to Coolah.

#### *Northern Lines.*

The northern system originally commenced at Newcastle, but a connecting line crosses the Hawkesbury River by means of the Hawkesbury Bridge, thus making Sydney the centre of the whole of the railway systems of the State, and affording direct communication between the five State capital cities of Perth, Adelaide, Melbourne, Sydney, and Brisbane, a distance of 3,476 miles.

The northern system has a branch from Tamworth to Barraba, and there is a north-westerly branch from Werris Creek, *via* Narrabri and Moree, to Inverell, placing the Namoi and Gwydir districts in direct communication

with the ports of Newcastle and Sydney. A branch runs from Moree to Mungindi, on the border of the State of Queensland. There is also a branch line from Narrabri to Walgett, with a further branch at Burren Junction to Collarenebri East.

From Muswellbrook a branch has been constructed to Merriwa, a distance of 51 miles. There is a short line connecting Newcastle with the tourist district of Lake Macquarie, and another line runs from East Maitland to Morpeth.

At West Maitland the North Coast railway branches from the main northern line; the construction is now proceeding in sections to meet a line which connects Murwillumbah, on the Tweed River, with Grafton, on the Clarence River; the sections from West Maitland to Macksville, from Raleigh to Coff's Harbour, and from Glenreagh to Grafton have been opened for traffic. On the Murwillumbah-Grafton line there is a branch from Casino to Kyogle. To provide an outlet for the produce of the fertile Dorrigo district, a branch of the North Coast line, from Dorrigo to Glenreagh, has been commenced. A short line, 13 miles in length, branches off the main northern line at Hornsby, and connects with the north shore of Port Jackson at Milson's Point, whence passengers are conveyed to the city by commodious ferry steamers.

#### *Goods Lines.*

A short line from the Central Station at Sydney connects with the wharves at Darling Harbour, and a line has been constructed from the stock saleyards at Flemington on the main suburban line to the Abattoirs at Homebush Bay; these lines are used for goods and live-stock only.

On account of the rapid growth of the traffic it has been found necessary to provide a means of access to the wharves, independent of the Central Station, by the construction of a line from Flemington to join the Sydenham-Bankstown branch of the South Coast line at Campsie, and a line from Wardell-road, also on this branch, to Darling Island, with a new shipping depôt at Glebe Island.

An extension from Sydenham has been commenced to serve the important manufacturing district of Botany.

#### *Commonwealth Railways in New South Wales.*

A short railway, 5 miles in length, has been constructed from Queanbeyan, on the Cooma-Bombala branch, to connect Canberra, the Federal Capital, with the State railway system. A trial survey of a line from Canberra to Yass has been made.

Under the Seat of Government Acceptance Act the Commonwealth Government has the right to construct a line from Canberra to Jervis Bay, 140 miles; a preliminary survey of the route has been made.

#### **ELECTRIFICATION OF RAILWAYS.**

The work of converting the lines from steam to electricity has so far been confined to the suburban system from Sydney to Belmore. The preliminary works, such as widening platforms and tracks, forming subways and roads, superstructure of bridges, &c., are well advanced.

#### **SYDNEY AND SUBURBAN PASSENGER SERVICE.**

A portion of the passenger traffic between Sydney and suburbs is conducted by suburban railways and ferry services, but the tramways form the most important means of communication.

The railway suburban traffic is conducted principally on the main trunk line, which runs in a westerly direction from Sydney to Granville, where the main southern and western railway systems separate; the northern system branches off at Strathfield (8 miles from Sydney). The South Coast railway, which has a branch from Sydenham (3 miles) to Bankstown (11 miles), brings passengers from the suburbs situated south of Sydney on the western shore of Botany Bay. The passengers travelling by these lines, however, are served by trams running through the city streets from the Central Station to Circular Quay.

The populous suburbs of the north-western, central, and eastern divisions of the metropolitan area are served entirely by the tramways. On the north shore of Port Jackson there is a railway to connect the ferry service at Milson's Point with Hornsby on the main northern line; with this exception all the passengers from the northern suburbs connect by tramway at various points with the ferry services to the Circular Quay.

On account of the expansion of the commercial interests of New South Wales, and the consequent growth of population in and around Sydney, where the trade of the State is centralised, the tramway system has been extended steadily, but the requirements of suburban traffic are gradually outgrowing the capacity of the main city thoroughfares, which were not originally designed for this class of traffic. Thus the extension of the tramway system, combined with the increase in the mercantile vehicular traffic, has resulted in a state of congestion in some of the city streets that demands remedy. The urgent necessity is now recognised of supplying a more effective method of dealing with the rapidly increasing traffic than is possible under any system of surface tramways.

#### CITY RAILWAY.

The city railway was commenced in 1916, but was suspended upon the cancellation of the Norton Griffiths contract in May, 1917. The original design included the city railway, with two up and two down tracks forming a loop round the city, the total length being 16 miles 52 chains of single track, of which 8 miles 66 chains are below ground; the Eastern Suburbs Railway, double track throughout of a total length of 8½ miles of single track; and the Western Suburbs Railway, double track throughout, connecting with the main suburban line between Stanmore and Petersham Stations, the total length being 5 miles 44 chains of single track. The estimated cost, exclusive of land resumption, was £6,400,000.

In March, 1922, operations were resumed by the Government, and considerable progress has been made in the preliminary work of excavation in connection with the first section from St. James Square to Belmore Park.

#### GRADIENTS OF RAILWAYS.

In many cases the railways of New South Wales pass through mountainous country, and have been constructed with a large proportion of steep gradients, some of the heaviest being situated on the trunk lines.

In the southern system, the line at Roslyn, near Crookwell, reaches an altitude of 3,225 feet above sea level; and at Nimmitabel, on the Goulburn to Bombala railway, the height is 3,503 feet. In the western system, at Newnes Junction, on the Blue Mountains, a height of 3,503 feet is attained; and on the northern line the highest point, 4,473 feet, is reached at Ben Lomond.

Numerous deviations have been made during recent years in order to secure easier grades and curves, with the result that considerable economy in working and expedition in traffic have been effected.



The following statement shows the number of miles on different gradients in June, 1921 :—

Gradients.	Southern System.	Western System.	Northern System.	Total.
1 in	miles.	miles.	miles.	miles.
18 to 30	3½	...	...	3½
31 „ 40	49½	61½	33	144
41 „ 50	66½	51	85½	202½
51 „ 60	58½	75½	59½	193½
61 „ 70	52½	59½	38½	151
71 „ 80	169½	103½	162½	435½
81 „ 90	41½	44½	45½	131½
91 „ 100	113½	146	87½	346½
101 „ 150	174	188½	152½	515
151 „ 200	104½	93½	87	284½
201 „ 250	54½	54½	42	150½
251 „ 300	74½	85½	62½	222½
301 „ level	749	789½	683½	2,221½
Total ...	1,710½	1,753½	1,538½	5,002½

The above table is exclusive of the Government line from Broken Hill to Tarrawingee, measuring 39 miles 41 chains, and that at Wollongong of 1 mile 8 chains.

#### COST OF RAILWAY CONSTRUCTION.

The average cost per mile open for traffic of the Government Railway lines, excluding expenditure for rolling stock, machinery, furniture, and workshops and stores, has been £12,746—an amount which is by no means high, considering the character of some parts of the country through which the lines have been carried, and the cost of labour.

The amount expended on rolling stock, etc., to 30th June, 1921, was £18,228,195, viz.:—Rolling stock, £14,567,278; machinery, £1,146,058; workshops, £955,955; furniture, £10,904; and stores advance account, £1,548,000. The total capital expenditure amounted to £82,304,194, an average of £16,321 per mile. The growth of the capital expenditure may be seen in the following table :—

Period.	Capital expended during period.	Total capital expended to end of period.	Period.	Capital expended during period.	Total capital expended to end of period.
	£	£		£	£
1855-9	1,278,416	1,278,416	1895-9	2,137,005	37,992,276
1860-4	1,353,374	2,631,790	1900-4	4,296,241	42,288,517
1865-9	2,049,539	4,681,329	1905-9	5,324,149	47,612,666
1870-4	2,163,217	6,844,546	1910-14	13,652,203	61,264,869
1875-9	3,561,949	10,406,495	1915-19	15,336,722	76,601,591
1880-4	9,673,643	20,080,138	1920	2,717,326	79,318,917
1885-9	9,759,029	29,839,167	1921	2,985,277	82,304,194
1890-4	6,016,104	35,855,271			

Of the £82,304,194 expended to 30th June, 1921, an amount of £659,930 has been provided from the Consolidated Revenue of the State, leaving a balance of £81,644,264 which has been raised by the issue of debentures and other stock. The net revenue for the year ended 30th June, 1921, after paying working expenses, was £3,234,528, which gave a return of 4·01 per cent. upon the total capital expenditure.

## WORKING EXPENSES AND EARNINGS.

While the primary object of State railway construction has been to promote settlement, apart from consideration of the profitable working of the lines, the principle has nevertheless been kept in view that the railways should be self-supporting.

A statement of the working expenses and earnings of the railways during the year ended 30th June, 1921, is shown below :—

Working Expenses.		Earnings.	
	£		£
Maintenance of Way, Works, and Buildings ... ..	1,807,964	Passengers ... ..	5,736,256
Locomotive Power ... ..	4,474,086	Mails, Parcels, Horses, &c. ...	647,775
Greasing and Oiling Carriages and Waggon ... ..	13,149	Total Coaching... ..	6,384,031
Carriage and Waggon Repairs and Renewals ... ..	972,347	Refreshment Rooms ... ..	455,212
Traffic Expenses ... ..	2,992,003	Goods—	
Compensation ... ..	37,408	Merchandise ... ..	4,197,080
General Charges ... ..	328,971	Live Stock ... ..	1,074,549
Refreshment Rooms ... ..	393,963	Wool ... ..	357,562
Gratuities, &c. ... ..	5,787	Minerals ... ..	1,641,665
Fire Insurance Fund .. ..	7,000	Total Goods ... ..	7,270,856
	11,032,678	Rents ... ..	83,955
Balance, Net Earnings ... ..	3,234,527	Miscellaneous ... ..	73,151
Total ... ..	£14,267,205	Total ... ..	£14,267,205

The expenditure on locomotive power amounted to 41 per cent. of the total; traffic expenses to 27 per cent.; and maintenance of way, works, and buildings to 16 per cent. Of the earnings, 40 per cent. was derived from the carriage of passengers, 5 per cent. from mails, parcels, &c., 3 per cent. from refreshment rooms, and 51 per cent. from the conveyance of goods.

As the carriage of goods and live stock constitutes the principal source of railway revenue, the earnings fluctuate in each year in accordance with the type of seasons experienced in the agricultural and pastoral districts. In unfavourable seasons the carriage of fodder and the transfer of live stock at reduced rates cause a diminution in the earnings, and at the same time an increase in the working expenses. The extension of the lines into sparsely settled districts also causes an increase in the proportion of working expenses to total earnings, as several of these lines earn little more than cost of maintenance.

The following table shows the gross earnings, working expenses, and the proportion of the expenditure to receipts, in stated years from 1890 up to 30th June, 1921 :—

Year ended 30th June.	Gross Earnings.	Working Expenses.	Proportion of working expenses to gross earnings.	Year ended 30th June.	Gross Earnings.	Working Expenses.	Proportion of working expenses to gross earnings.
	£	£	per cent.		£	£	per cent.
1890	2,633,086	1,665,835	63·3	1910	5,483,715	3,276,409	59·7
1895	2,878,204	1,642,589	57·1	1915	7,616,511	5,311,162	69·7
1900	3,163,572	1,844,520	58·3	1920	13,083,847	9,570,984	73·2
1905	3,684,016	2,216,442	60·2	1921	14,267,205	11,032,678	77·3

The working expenses during the year ended 30th June, 1921, represented 77·3 per cent. of the gross earnings. In 1907 the proportion was 53·0 per cent., the lowest since the control of the railways was vested in Commissioners, but the percentage has risen steadily since that year, the increase in 1920 and 1921 being due mainly to advances in the salaries and wages of the staff, in the prices of coal and other necessary materials, additional payments for rates on railway properties under the Local Government Act, 1919, and to other items.

The following table shows the gross earnings, working expenses, and net earnings per train mile and per average mile open at five yearly intervals from 1900 onwards:—

Year ended 30th June.	Per train mile.			Per average mile open.		
	Gross Earnings.	Working Expenses.	Net Earnings.	Gross Earnings.	Working Expenses.	Net Earnings.
	d.	d.	d.	£	£	£
1900	85·36	49·77	35·59	1,139	664	475
1905	84·46	50·82	33·64	1,123	676	447
1910	85·12	50·84	34·28	1,513	904	609
1915	89·52	62·42	27·10	1,877	1,309	568
1920	137·51	100·59	36·92	2,635	1,927	708
1921	150·23	116·17	34·06	2,843	2,198	645

#### NET EARNINGS AND INTEREST ON CAPITAL.

The net revenue from railways for the year ended 30th June, 1921, was £3,234,527, while the capital expended on lines open for traffic to that date was £82,304,194, including £659,930 paid from consolidated revenue. The amount thus available to meet the interest charges on the capital expended represents a return of 4·01 per cent. The following table shows the net earnings and the interest returned on the total capital expended on railways, including the cost of construction and equipment for the year 1890 and subsequent periods:—

Year ended 30th June.	Net Earnings.	Interest on Capital.	Year ended 30th June.	Net Earnings.	Interest on Capital.
	£	per cent.		£	per cent.
1890	967,251	3·17	1910	2,209,306	4·58
1895	1,235,615	3·31	1915	2,305,349	3·60
1900	1,319,052	3·43	1920	3,512,863	4·48
1905	1,467,574	3·40	1921	3,234,527	4·01

The table below shows the rate of interest returned on the capital expenditure for each of the years since 1912, with the amount by which such

return falls short of or exceeds the actual rate of interest payable on the cost of construction. The rate of return on capital represents the interest on the gross cost of the lines :—

Year ended 30th June.	Interest returned on Capital.	Actual rate of Interest payable on Public Debt.	Gain (+) or Loss (—).	Year ended 30th June.	Interest returned on Capital.	Actual rate of Interest payable on Public Debt.	Gain (+) or Loss (—).
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
1912	4·41	3·60	+0·81	1917	3·50	4·09	—0·59
1913	3·76	3·49	+0·27	1918	4·10	4·17	—0·07
1914	3·87	3·67	+0·20	1919	4·03	4·10	—0·07
1915	3·60	3·67	—0·07	1920	4·48	4·30	+0·18
1916	3·45	3·78	—0·33	1921	4·01	4·42	—0·41

The railway being owned by the State, public opinion at once demands a reduction in freights and fares when the net earnings are much in excess of the interest requirements; substantial reductions were made in 1911 and 1912, but passenger fares and goods rates have been increased considerably since June, 1913.

#### COACHING AND GOODS TRAFFIC.

For the first ten years after the opening of the first railway in New South Wales the larger part of the earnings was obtained from the passenger traffic, no doubt owing to the fact that the first lines were entirely suburban. It was not until the line crossed the mountains and opened up the interior that the proportions changed, and the goods traffic became the principal source of revenue.

The following table gives the proportion of earnings from the coaching and goods traffic at intervals since 1890. The percentages shown for coaching include earnings from miscellaneous sources and rents, and therefore differ slightly from those stated on a previous page :—

Year ended 30th June.	Proportion of Total Earnings.		Year ended 30th June.	Proportion of Total Earnings.	
	Coaching, &c.	Goods and Live Stock.		Coaching, &c.	Goods and Live Stock.
	per cent.	per cent.		per cent.	per cent.
1890	40·2	59·8	1910	39·9	60·1
1895	35·5	64·5	1915	44·7	55·3
1900	38·8	61·2	1920	47·7	52·3
1905	39·9	60·1	1921	48·8	51·2

#### Coaching Traffic.

The following table shows the number of passenger journeys and the receipts from coaching traffic since 1890 :—

Year ended 30th June.	Passenger Journeys.	Gross Earnings from Coaching Traffic.	Per head of population.	
			Passenger Journeys.	Gross Earnings from Coaching Traffic.
	No.	£	No.	s. d.
1890	17,071,945	1,041,607	15·8	19 3
1895	19,725,418	1,001,107	15·9	16 2
1900	26,486,873	1,195,496	19·7	17 6
1905	35,158,150	1,428,190	24·4	19 10
1910	53,644,271	2,124,292	33·6	26 7
1915	88,774,451	3,315,294	47·1	35 2
1920	114,654,660	5,714,131	56·3	56 1
1921	120,735,140	6,384,031	57·8	61 1

Particulars regarding the passenger traffic on suburban and country lines during the years 1916 and 1921 are shown below; suburban lines include distances within 34 miles of Sydney and Newcastle :—

Description.	Year ended 30th June, 1916.			Year ended 30th June, 1921.		
	First Class.	Second Class.	Total.	First Class.	Second Class.	Total.
<b>SUBURBAN LINES.</b>						
Ordinary Passengers ...	6,042,314	30,295,417	36,337,731	5,597,539	37,728,346	43,325,885
Season Ticket Holders' ...						
Journeys ...	7,585,080	15,783,000	23,371,080	10,530,180	25,647,750	36,177,930
Workmen's Journeys ...	...	23,943,996	23,943,996	...	30,751,980	30,751,980
Total Passenger Journey	13,627,394	70,025,413	83,652,807	16,127,719	94,128,076	110,255,795
Miles Travelled ...	96,034,500	489,961,313	585,995,813	114,885,823	684,700,563	799,586,386
Average Mileage per Passenger ...	7.05	7.00	7.01	7.12	7.27	7.25
Amount Received from Passengers ... £	234,790	820,100	1,054,890	397,224	1,642,430	2,039,654
Average Receipts per Passenger per mile ... d.	.59	.40	.43	.83	.58	.61
<b>COUNTRY LINES.</b>						
Passengers ...	2,248,548	6,949,483	9,198,031	2,424,665	8,054,680	10,479,345
Miles travelled ...	281,838,129	453,657,257	735,495,386	326,689,374	494,581,098	821,270,472
Average Mileage per Passenger ...	125.34	65.28	79.96	134.74	61.40	78.37
Amount Received from Passengers ... £	912,023	1,180,128	2,092,151	1,612,137	2,084,465	3,696,602
Average Receipt per Passenger per Mile ... d.	.78	.62	.68	1.18	1.01	1.08

Information relating to passenger mileage from 1912 onwards is contained in the following table :—

Year ended 30th June.	Passenger Train Mileage. (000 omitted.)	Passenger Journeys. (000 omitted.)	Total Passenger Miles. (000 omitted.)	Amount received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger Journey.	Average Receipt per Passenger Mile.	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
				£			d.	d.	
1912	8,978	70,707	1,091,088	2,349,280	121	15.43	0.51	7.97	287,204
1913	9,667	79,490	1,192,584	2,571,446	123	15.00	0.54	7.76	308,002
1914	10,081	86,328	1,235,025	2,832,450	123	14.37	0.55	7.87	312,804
1915	10,099	88,774	1,230,901	2,910,684	122	13.87	0.57	7.87	303,402
1916	10,283	92,851	1,321,491	3,147,041	129	12.85	0.57	8.13	316,980
1917	10,435	96,710	1,473,707	3,202,167	141	15.24	0.52	7.95	341,690
1918	9,441	94,305	1,384,766	3,473,340	147	14.67	0.60	8.84	304,277
1919	9,689	98,569	1,367,691	3,533,869	141	13.88	0.62	8.60	288,725
1920	11,136	114,655	1,632,627	5,137,247	147	14.24	0.76	10.75	328,761
1921	10,751	120,735	1,620,857	5,736,256	151	13.42	0.85	11.40	322,944

Passenger traffic is greatest within the Sydney and Newcastle suburban areas, and the rates of fares within a 34 miles radius of either of these cities

are lower than for equal distances outside the areas mentioned. The following tables show the fares charged in 1911, 1916, and 1921 for stated distances from either Sydney or Newcastle.

*Single Tickets.*

Distance.	30th June, 1911.		30th June, 1916.		30th June, 1921.	
	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.
Miles.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	0 0 2	0 0 1	0 0 2	0 0 1	0 0 3½	0 0 2
5	0 0 5	0 0 4	0 0 5	0 0 4	0 0 8	0 0 6
10	0 0 9	0 0 6	0 0 9	0 0 6	0 1 3	0 0 10½
20	0 1 6	0 0 11	0 1 6	0 0 11	0 2 5	0 1 6
30	0 2 2	0 1 5	0 2 2	0 1 5	0 3 7	0 2 4
34	0 2 6	0 1 7	0 2 6	0 1 7	0 4 1	0 2 7½
50	0 4 6	0 2 11	0 4 7	0 3 0	0 7 7	0 5 0
100	0 10 9	0 7 1	0 11 2	0 7 4	0 18 7	0 12 2
200	1 3 3	0 14 9	1 4 3	0 15 5	2 0 7	1 5 7
300	1 15 9	1 2 1	1 17 5	1 3 1	3 2 2	1 18 3
400	2 8 3	1 8 8	2 10 6	1 10 0	4 3 7	2 9 10
500	2 18 0	1 13 4	3 0 9	1 15 1	5 0 8	2 17 10

*Periodical Tickets.*

Distance.	30th June, 1911.			30th June, 1916.			30th June, 1921.		
	Work-men's Weekly.	Monthly.		Work-men's Weekly.	Monthly.		Work-men's Weekly.	Monthly.	
		First Class.	Second Class.		First Class.	Second Class.		First Class.	Second Class.
	s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.
1	0 6	0 7 6	0 5 0	0 9	0 9 0	0 6 0	1 3	0 14 6	0 9 9
5	1 6	0 16 0	0 10 9	1 9	0 19 3	0 13 0	2 11	1 10 9	1 0 6
10	2 2	1 2 9	0 15 0	2 6	1 7 3	0 18 0	4 1	2 4 0	1 9 0
20	3 0	1 10 3	1 0 3	3 4	1 16 3	1 4 3	5 5	2 18 0	1 19 3
30	3 10	1 14 3	1 2 9	4 2	2 1 0	1 7 3	6 11	3 6 6	2 4 9
34	4 2	1 15 9	1 3 6	4 6	2 3 0	1 8 3	7 5	3 9 3	2 6 0
50	...	2 1 0	1 6 3	...	2 9 3	1 11 6	...	3 19 9	2 11 0
100	...	2 17 9	1 14 6	...	3 9 3	2 1 6	...	5 12 6	3 6 9
200	...	4 3 0	2 9 0	...	4 19 6	2 18 9	...	7 16 3	4 12 6
300	...	5 0 6	3 1 6	...	6 0 6	3 13 9	...	9 1 9	5 12 0
400	...	5 18 0	3 14 0	...	7 1 6	4 8 9	...	10 7 0	6 11 3
500	...	6 15 6	4 6 6	...	8 2 6	5 3 9	...	11 11 6	7 10 6

The above rates represent the maximum charges, but liberal concessions are made in respect of periodical tickets to school pupils, youths, and women. Cheaper fares are available for journeys to tourist districts and holiday resorts.

*Goods Traffic.*

The following figures show how greatly the goods traffic has expanded, especially in recent years :—

Year ended 30th June.	Goods and Live Stock Traffic.		Per head of Population.	
	Tonnage.	Gross Earnings.	Tonnage.	Gross Earnings.
		£		£ s. d.
1890	3,788,950	1,569,356	3·5	1 9 0
1895	4,075,093	1,855,187	3·3	1 9 11
1900	5,531,511	1,936,217	4·1	1 8 5
1905	6,724,215	2,213,105	4·7	1 10 9
1910	8,393,038	3,290,640	5·3	2 1 3
1915	11,920,881	4,206,234	6·3	2 4 8
1920	13,293,528	6,807,792	6·5	3 6 10
1921	15,563,131	7,270,856	7·4	3 9 7

A statement showing the class of goods carried on the railways since 1900 is shown below :—

Year ended 30th June.	General Merchandise.		Wool.	Live Stock.	Minerals.		Total Goods.
	Grain, Flour, etc. (Up Journey).	Other.			Coal, Coke, and Shale.	Other.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1900	361,052	1,151,564	84,678	188,595	3,406,769	338,853	5,531,511
1905	522,755	1,398,443	90,572	174,424	4,169,076	368,945	6,724,215
1910	608,405	2,100,203	138,779	463,669	4,553,965	528,017	8,393,038
1915	482,876	2,849,908	132,895	849,604	6,649,704	955,894	11,920,881
1920	764,457	3,685,983	117,171	900,933	6,732,859	1,092,125	13,293,528
1921	1,216,834	3,375,443	93,760	732,804	3,881,796	1,262,494	15,563,131

The following table shows information relating to ton mileage for the last ten years :—

Year ended 30th June.	Goods Train Mileage. (000 omitted.)	* Tons Carried. (000 omitted.)	† Ton-miles. (000 omitted.)	Earnings, exclusive of Terminal Charges.	Average Freight- paying Load carried per Train.	Average Miles per Ton.	Earnings per Ton- mile.	Density of Traffic per average mile Worked.
				£	Tons.		d.	Tons.
1912	9,544	10,632	862,016	3,181,771	90·32	81·03	0·89	226,906
1913	9,517	11,402	861,940	3,153,626	90·57	75·60	0·88	222,608
1914	10,469	12,901	1,037,911	3,730,384	99·14	80·45	0·87	262,165
1915	10,321	11,660	916,923	3,633,613	88·84	78·64	0·95	236,010
1920	11,693	13,010	1,394,099	6,106,563	119·17	107·15	1·05	280,729
1921	11,491	15,262	1,418,386	6,501,914	123·43	92·94	1·10	282,603

\* Exclusive of coal, etc., on which shunting charges only were collected.

† "Ton-mileage" is the product of the load in tons and the distance in miles over which the load is carried.

*Freight Charges.*

The following table gives the charges per ton for haulage of the different classes of freight over distances of 100 and 500 miles in 1911, 1916, and 1921 :—

Class of Freight.	35th June, 1911.		30th June, 1916.		30th June, 1921.	
	100 miles.	500 miles.	100 miles.	500 miles.	100 miles.	500 miles.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Ordinary Goods (per ton)—						
Highest Class Freight...	2 4 11	5 15 9	2 9 5	6 7 4	3 15 0	9 13 3
Lowest " "...	0 3 7	0 11 11	0 3 7	0 11 11	0 6 6	0 15 0
Agricultural Produce						
(Up journey)...	0 7 6	0 12 0	0 7 6	0 12 0	0 11 5	0 18 2
Butter ...	0 18 10	2 16 4	1 0 9	3 2 0	1 11 7	4 14 0
Beef, Mutton, Veal, &c.						
(frozen) ...	0 9 2	2 5 10	0 9 2	2 5 10	0 14 7	3 12 11
Wool—Greasy ...	1 5 0	3 8 9	1 5 0	3 8 9	1 17 11	5 4 4
" —Scoured ...	1 9 2	3 15 0	1 9 2	3 15 0	2 4 3	5 13 10
Minerals—Crude Ore,						
not exceeding £20 per						
ton in value ...	0 4 2	0 15 8	0 4 2	0 15 8	0 6 5	1 2 6
Live Stock (per truck)—	3 3 4	8 13 9	3 9 8	9 11 2	5 10 5	15 3 4

The highest class freight includes expensive, bulky, or fragile articles, such as boots, drapery, drugs, groceries, furniture, liquors, crockery, glassware, cutlery, ironmongery, confectionery, and carpets; the lowest class includes agricultural produce, ore, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, rabbit-proof netting, timber in logs, and posts and rails.

## EXPANSION OF TRAFFIC.

The expansion which has taken place in the volume of traffic on the railways of New South Wales will be seen from the following comparison. The earnings during the quinquennium 1917–1921, show an increase of £18,038,902, or 49 per cent., as compared with the previous five years; the number of passengers increased by 26 per cent.; and the tonnage of goods and live stock, etc., by 8 per cent. :—

		Five years ended 30th June, 1916.	Five years ended 30th June, 1921.	Increase.	Percentage increase.
Earnings					
Coaching Traffic ...	£	16,218,844	25,681,471	9,462,627	58.3
Goods and Live Stock...	£	17,715,788	24,364,352	6,648,564	38
Coal, Coke, and Shale...	£	2,670,656	4,598,367	1,927,711	72
Total earnings ...	£	36,605,288	54,644,190	18,038,902	49
Passengers... ..	No.	418,150,450	524,972,930	106,822,480	26
Goods and Live Stock ...	Tons	25,430,217	31,229,057	5,798,840	23
Coal, Coke, and Shale ...	Tons	34,228,809	33,367,538	(—) 861,271	(—) 3
Total Tonnage... ..		59,659,026	64,596,595	4,937,569	8

(—) Indicates decrease.



## ROLLING STOCK.

Information regarding the rolling stock of New South Wales Railways on 30th June, 1920 and 1921, appears in the following table :—

Classification.	1920.	1921.	Classification.	1920.	1921.
Locomotives—			Merchandise—		
Engines.. ...	1,279	1,301	Goods, open ...	15,871	16,063
Tenders ...	1,040	1,064	Goods, covered ...	947	945
Coaching—			Meat trucks ...	428	428
Special & Sleeping cars	96	96	Live-stock trucks ...	2,890	2,889
First-class ...	437	467	Brake-vans ...	599	605
Composite ...	215	218	Total ...	20,735	20,930
Second-class ...	917	961			
Brake-vans ...	136	138	Departmental Stock—		
Horse-boxes, carriages, trucks, &c. ...	288	289	Loco. coal, ballast, etc., waggons ...	1,803	1,825
Total... ..	2,089	2,169			

## SIGNALLING AND SAFETY APPLIANCES.

Great progress has been made in providing safety appliances at various places. At many of the principal stations the points and signals are inter-locked, and at the Central Station, Sydney, an electro-pneumatic system of signalling is in operation. During 1913, track block and automatic signalling—the first in Australia—was installed between Redfern Tunnel Signal-box and Sydenham Junction; this system has been extended to 251 miles 8 chains of double track.

Particulars regarding the various systems employed for the safe working of the lines in 1920 and 1921 are shown below :—

	1920.		1921.	
	Mls.	Chs.	Mls.	Chs.
Single Line.				
By electric tablet	313	6	315	17
electric train staff ...	1,823	63	1,822	43
train staff and ticket with line clear reports ...	1,451	33	1,451	38
train staff and ticket without line clear reports.	685	42	714	1
train staff and one engine only ...	116	57	116	57
	4,395	46	4,419	76
Double Line.*				
By automatic signalling with track block working	170	60	251	8
absolute manual block system ...	458	19	382	0
permissive manual block system...	5	12	5	12
telephone ...	0	33	0	33
	634	44	638	53

The experimental installation of a locomotive cab signalling system laid down on the Richmond line in 1917 has been attended with success, and the system is now being installed on the line between Junee and Albury.

The Westinghouse brake is used on all the rolling stock of the Government railways.

## RAILWAY ACCIDENTS.

The persons meeting with accidents on railway lines may be grouped under three heads—passengers, employees, and trespassers; and the accidents themselves may be classified into those arising from causes beyond the control of the persons injured, and those due to misconduct or want of caution.

The accidents may be further subdivided into those connected with the movement of railway vehicles and those apart from such movement.

Adopting such classifications, the accidents during the quinquennial period terminated on 30th June, 1921, are shown in the following table :—

Classification.	Accidents connected with the Movement of Railway Vehicles.					Accidents not connected with the Movement of Railway Vehicles.				
	1917.	1918.	1919.	1920.	1921.	1917.	1918.	1919.	1920.	1921.
<b>Passengers—</b>										
Causes beyond their own control—										
Killed ... ..	...	...	...	...	5	...	...	...	...	...
Injured ... ..	34	25	27	20	58	11	4	6	7	15
Their own misconduct, or want of caution—										
Killed ... ..	14	12	4	10	14	...	...	...	...	...
Injured ... ..	141	142	137	159	133	53	59	91	73	67
<b>Servants of the Department—</b>										
Causes beyond their own control—										
Killed ... ..	...	1	...	...	2	...	2	...	...	...
Injured ... ..	30	24	42	75	39	92	96	127	140	248
Their own misconduct, or want of caution—										
Killed ... ..	16	20	17	19	13	5	3	2	5	6
Injured ... ..	283	221	387	400	223	2,408	2,505	3,020	4,184	5,246
<b>Trespassers and others—</b>										
Killed ... ..	33	26	23	41	34	7	4	8	5	2
Injured ... ..	84	84	97	97	101	157	102	105	109	78
<b>Total</b> { Killed ... ..	63	59	44	70	68	12	9	10	10	8
Injured ... ..	572	496	690	751	554	2,721	2,766	3,349	4,513	5,654

The above return is compiled in a similar way to that adopted by the Board of Trade in England, and all accidents are reported which occur in the working of the railways, or on railway premises, to persons other than servants of the Department, however slight the injuries may be. In the case of employees of the Department all accidents must be reported which cause the employee to be absent for at least one whole day from his ordinary work.

The accident rates among passengers per million carried during the quinquennium ended 30th June, 1921, were as follow :—

	Killed.	Injured.
<b>Accidents connected with movement of railway vehicles—</b>		
Causes beyond their own control ... ..	·01	·31
Their own misconduct or want of caution ... ..	·10	1·36
<b>Accidents not connected with movement of railway vehicles—</b>		
Causes beyond their own control ... ..	...	·08
Their own misconduct or want of caution ... ..	...	·65
<b>Total ... ..</b>	<b>·11</b>	<b>2·40</b>

The amount of compensation paid during the twelve months ended 30th June, 1921, in connection with accidents on railways, was £37,406, of which £12,606 was personal, £24,800 being paid in respect of goods.

### PRIVATE RAILWAY LINES.

In New South Wales the established policy has been to keep the railways under State management and control, and at the present time there are only 158 miles of private lines in operation, with the exception of short lines to connect coal and other mines with the main railways, on some of which provision has been made for the carriage of passengers and goods.

In 1874 Parliament granted permission to a company to construct a line from Deniliquin, in the centre of the Riverina district, to Moama, on the River Murray, where it meets the railway system of Victoria. The line, which was opened in the year 1876, is of 5 ft. 3 in. gauge and 45 miles in length; a considerable proportion of the wool and other produce of the Riverina reaches the Melbourne market by this route. During the year 1888 a line of 3 ft. 6 in. gauge, and 35 miles 54 chains in length, was laid down from Silvertown and Broken Hill to the South Australian border. A short line connects the Government railway at Liverpool with the Warwick Farm Racecourse. The Seaham Coal Company's line connects the West Wallsend and Seaham Collieries with Cockle Creek; and the line of the Commonwealth Oil Corporation extends from Newnes Junction, on the Western line, to the Wolgan Valley. The following table shows the operations of all private railway lines open to the public for general traffic during the year 1920.

Name of Private Railway.	Line.		Total Capital Expended.	Reserve Fund.	Deben- tures Out- stand- ing.	Passen- gers Carried.	Goods Carried.	Live Stock Carried.	Train Miles Run.
	Length.	Gauge							
	m. ch.	ft. in.	£	£	£	No.	tons.	No.	No.
Deniliquin and Moama.	45	0 5 3	162,673	14,010	...	22,668	19,757	426,883	45,375
Silvertown† ...	35	54 3 6	482,786	30,553	...	36,483	*231,418	35,165	49,597
Warwick Farm ...	0	66 4 8½	5,700	...	...	59,427	...	654	91
Seaham Colliery...	6	0 4 8½	16,000	...	...	18,382	9,179	...	7,850
East Greta ...	19	35 4 8½	546,086	...	...	789,664	202,100	...	430,241
Hexham-Minmi ...	6	0 4 8½	\$1,000,000	...	...	245	600	...	1,968
Commonwealth Oil Corporation.	33	0 4 8½	194,000	...	475,000	1,987	14,446	...	14,604
New Red Head†...	12	0 4 8½	102,000	...	...	‡	‡	...	‡

\* Excludes 280,234 tons local shunting.

† Year ended 30th June, 1921.

‡ Not available.

§ Approximate.

The Deniliquin and Moama Company possesses 4 locomotives, 6 passenger carriages, and 60 goods carriages and vans. The Silvertown Company has 20 locomotives, 665 goods vehicles, and 1 passenger carriage; and passenger carriages are hired also from the South Australian Government railways as required. On the Warwick Farm line Government rolling stock is used. The Seaham Colliery has 2 locomotives, but otherwise Government rolling stock is used. On the East Greta railway there are 23 locomotives, 27 passenger carriages, and 45 goods carriages. The Hexham-Minmi Company has 1 locomotive and 1 passenger carriage; and the Commonwealth Oil Corporation has 4 locomotives, 2 passenger carriages, 1 motor car, and 67 goods carriages and vans.

In addition to the private railway lines shown in the previous table, there are several branches, connected principally with coal and other mines, with a total length of 135½ miles, a summary of which is given below:—

District.	Length. m. ch.	Gauge. ft. in.
Connected with Northern Line ... ..	95 54	4 8½
„ Western „ ... ..	6 39	4 8½
„ South Coast „ ... ..	3 40 29 76	3 6 4 8½

## RAILWAYS OF NEW SOUTH WALES AND OTHER COUNTRIES.

The position of the railways of New South Wales, including Government and all private lines, in relation to other important countries of the world, is shown in the following table for the year 1921 in comparison with 1890, to illustrate the relative progress during the last thirty one years. The figures for South Australia and Western Australia are inclusive of the Federal Government lines. It is, however, necessary to remember that there are vital circumstances which really invalidate any effective comparison, as, for instance, differences in population, and in the assistance received or competition encountered from river or sea carriage. In cases where the figures for 1921 could not be obtained those for the latest year available have been inserted.

Country.	1890.			1921.		
	Length of Railways.	Per Mile of Line Open.		Length of Railways.	Per Mile of Line Open.	
		Popu- lation.	Area.		Popu- lation.	Area
	miles.	No.	sq. mls.	miles.	No.	sq. mls.
New South Wales ... ..	2,263	496	137	5,405	350	57
Victoria ... ..	2,471	457	36	4,338	354	20
Queensland ... ..	2,142	180	509	7,013	109	96
South Australia ... ..	1,774	183	312	3,458	144	110
Western Australia ... ..	505	96	2,099	4,846	69	201
Tasmania ... ..	399	362	66	840	254	31
New Zealand... ..	1,956	320	53	3,134	401	33
United Kingdom ... ..	19,943	1,986	6	23,725	1,981	5
Russia (Europe and Asia) ... ..	17,363	5,291	493	59,541	3,067	145
Germany ... ..	24,270	1,931	9	39,600	1,629	5
France... ..	21,899	1,745	9	31,958	1,239	6
Switzerland ... ..	1,869	1,569	8	3,600	1,094	4
Austria... ..	15,267	2,481	16	15,739	1,855	7
Hungary ... ..				13,589	1,555	9
Canada... ..	12,628	402	270	38,604	229	97
United States of America ... ..	154,276	398	19	266,381	395	11
Argentine Republic ... ..	3,635	825	319	21,880	379	53
Japan ... ..	534	74,171	276	7,147	7,956	21
Italy ... ..	Not available ... ..			11,891	3,090	9
India ... ..				36,333	8,674	50
Union of South Africa ... ..				10,021	697	47
Mexico... ..				15,840	978	48
Brazil ... ..				17,477	1,745	187

Information relating to the year 1890 is not available for the last five countries mentioned in the table, but the latest figures have been inserted, in order that comparisons for 1921 may be more complete.

## RAILWAY GAUGES OF AUSTRALIA.

The classification of all railways according to gauge as at 30th June, 1921, may be seen below. The Commonwealth lines have been included with the systems of the States through which they have been constructed :—

State.	Mileage with Gauge.								Total Miles.
	1ft. 8in.	2ft.	2ft. 3in.	2ft. 6in.	3ft.	3ft. 6in.	4ft. 8½in.	5ft. 3in.	
New South Wales...	...	36	...	...	...	80	5,244	45	5,405
Victoria ...	...	13	...	122	15	...	...	4,188	4,338
Queensland...	...	942	...	26	...	6,045	...	...	7,013
South Australia (inc. N. Territory) ...	...	10	4	2	...	1,920	597	1,124	3,657
Western Australia...	29	29	...	...	...	4,334	454	...	4,846
Tasmania ...	...	50	...	...	...	790	...	...	840
Total ...	29	1,080	4	150	15	13,169	6,295	5,357	26,099

In consequence of the diversity of gauge interstate railway communication is seriously hampered, and in a journey from Queensland to Western Australia breaks of gauge occur at Wallangarra, where the systems of Queensland and New South Wales meet; at Albury, on the border of New South Wales and Victoria; at Terowie and Port Augusta in South Australia; and at Kalgoorlie, where the Commonwealth and the Western Australian lines connect.

The question of fixing the standard gauge has been the subject of many diverse professional opinions. The New South Wales gauge of 4 ft. 8½ in. has been recommended by the chief railway engineers of the Commonwealth and of five States and by the Railway War Council, and was adopted for the Port Augusta-Kalgoorlie railway.

Each year the problem of the unification of gauges becomes of more pressing importance because of its relation to questions of ordinary traffic as well as of defence; and the longer the delay the greater the cost becomes.

The necessity and urgency of a uniform gauge to connect the State capitals were affirmed in May, 1920, at a conference between the Prime Minister of the Commonwealth and the State Premiers, who also agreed upon the allocation of the cost and arranged that a committee of railway experts should report regarding costs, etc. Following upon the presentation of this report, at a further conference held in July, 1920, the question was again discussed, and it was finally decided that in the first place a thorough test should be made at Tocumwal of the third rail device; secondly, that the question of the gauge to be used, the scheme which would best meet requirements, and the estimated cost, should be investigated by a commission of two expert engineers from overseas and a chairman selected in Australia by the Prime Minister. The commission recommended the adoption of the 4 ft. 8½ in. gauge, submitted estimates of the cost of converting all lines to this gauge, and made recommendations regarding the order in which the work should be carried out, and the methods by which it should be executed and controlled. The question is still under consideration by the Commonwealth and State Governments.

## TRAMWAYS.

With the exception of 2½ miles privately owned, the tramways of New South Wales are the property of the State Government. The standard gauge of 4 ft. 8½ in. has been adopted for all lines. The electric system was introduced into Sydney at the close of 1899, and is now used for all

tramways in the metropolitan district. Of the 227 $\frac{1}{4}$  miles of line open at 30th June, 1921, there were 156 $\frac{3}{4}$  miles under the electric system and 70 $\frac{1}{2}$  miles worked by steam.

Line.	Length of Line.	Length of Single Track.
Electric—	mls. ch.	mls. ch.
City and Suburban ... ..	114 34	209 57
North Sydney ... ..	21 75	37 16
Ashfield to Mortlake and Cabarita ... ..	8 38	15 9
Rockdale to Brighton-le-Sands ... ..	1 20	1 20
Manly to The Spit and Manly to Narrabeen ... ..	10 58	15 38
	156 65	278 60
Steam—		
Arncliffe to Bexley ... ..	2 50	2 50
Kogarah to Sans Souci ... ..	5 45	6 79
Parramatta to Castle Hill ... ..	6 55	6 55
Sutherland to Cronulla ... ..	7 32	7 32
Newcastle City and Suburban ... ..	34 7	44 37
East to West Maitland ... ..	4 5	4 5
Broken Hill ... ..	10 4	11 35
	70 35	83 53
Total ... ..	227 23	362 33
Sidings, loops, and Cross-overs ... ..	...	56 0

During the year ended 30th June, 1921, the length of tramway opened for traffic was 1 mile 37 chains of double track.

The tramway rolling stock, on 30th June, 1921, consisted of 26 steam motors, 74 steam cars, 1,348 motor cars and 2 trail cars for electric lines, and 113 service vehicles, making a total of 1,563.

The capital cost of the State tramways to 30th June, 1921, amounted to £9,060,757, or £39,864 per mile open; the cost of construction was £4,717,197, or £20,754 per mile, and the expenditure on rolling stock, workshops, machinery, etc., amounted to £4,343,560.

#### Working of Tramways.

The following statement shows the working of the various tramways in sections for the year ended 30th June, 1921. Four sections returned a profit during the period, and the total profit on all lines, after allowing for interest on capital, amounted to £106,672.

Line.	Cost of Construction and Equipment.	Passengers carried.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest on Capital.	Profit + Loss —
Electric—	£	No.	£	£	£	£	£
City and Suburban ... ..	6,624,821	277,687,038	2,831,072	2,316,023	515,049	309,791	+ 205,258
North Sydney ... ..	821,212	26,538,591	262,161	220,277	41,884	38,309	+ 3,575
Ashfield to Mortlake and Cabarita ... ..	211,220	6,228,127	56,412	53,715	2,697	10,033	— 7,336
Manly to The Spit and Manly to Narrabeen ... ..	330,768	4,512,034	59,485	54,533	4,952	15,618	— 10,666
Rockdale to Brighton-le-Sands ... ..	21,590	881,573	7,229	4,584	2,645	1,025	+ 1,620
Steam—							
Arncliffe to Bexley ... ..	22,788	639,358	5,830	8,670	— 2,840	1,081	— 3,921
Kogarah to Sans Souci ... ..	29,701	1,249,892	15,800	20,533	— 4,733	1,409	— 6,142
Parramatta to Castle Hill ... ..	39,897	1,106,405	13,658	14,455	— 797	1,896	— 2,693
Sutherland to Cronulla ... ..	52,314	1,016,970	19,101	16,007	3,094	2,491	+ 603
Newcastle City and Suburban ... ..	780,152	16,054,741	182,110	196,338	— 14,228	34,173	— 48,401
East to West Maitland ... ..	35,107	687,269	7,128	8,501	— 1,373	1,667	— 3,040
Broken Hill ... ..	91,187	1,087,875	11,752	29,616	— 17,864	4,321	— 22,185
Total, All Lines... ..	9,060,757	337,689,873	3,471,738	2,943,252	528,486	421,814	+ 106,672

*Revenue and Expenditure.*

In the following table are given details of revenue and expenditure, and capital invested for all State tramways, since 1880. The net earnings of the tramways for the year ended 30th June, 1921, amounted to 5·93 per cent. on cost of construction and equipment, as compared with 4·56 per cent., the actual interest payable, taking into consideration the actual sum obtained by the State for its loans, many of which were floated below par :—

Year ended 30th June.	Total Length of Lines.	Capital Expended on Lines open for Traffic.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest Returned on Capital.
	Miles.	£	£	£	£	per cent.
1880	4½	60,218	18,980	13,444	5,536	9·19
1890	39½	983,614	268,962	224,073	44,889	4·81
1900	71½	1,924,720	409,724	341,127	68,597	3·50
1910	165½	4,668,797	1,185,568	983,587	201,981	4·33
1915	219½	7,970,293	1,986,060	1,611,286	374,774	4·70
1920	225½	8,768,548	2,881,797	2,486,121	395,676	4·56
1921	227½	9,060,757	3,471,738	2,943,252	528,486	5·83

The increase in the working expenses for the years 1920 and 1921 is attributable to the same causes referred to with regard to Railways on page 410.

During the year ended 30th June, 1921, the percentage of working expenses to the total receipts was 84·8, as compared with 86·3 in the previous year; the net earnings amounted to £528,486, which is equal to a net return per average mile open of £2,336, as compared with £1,753 per mile open in the previous year.

*Tram Fares.*

The following table shows the fares charged on the trams for one and more sections at five yearly periods since 1911. The average length of a section is 1 mile 78 chains :—

Sections.	Week Days.			Sundays.		
	June, 1911.	June, 1916.	June, 1921.	June, 1911.	June, 1916.	June, 1921.
1	d.	d.	d.	d.	d.	d.
2	1	1	2	1	2	3
3	2	2	3	2	3	4
4	3	3	4	3	4	5
5	4	4	5	4	5	6
6	5	5	6	5	6	7
7	6	6	6	6	6	7

*Comparison of Tramway Traffic.*

The following statement contains a comparison of the passenger traffic and the tram mileage since 1900. With the extension of the tramway system the earnings per tram mile decreased from 2s. 3d. in 1900 to 1s. in 1905, but have since risen to 2s. 5d.; the working cost per tram mile dropped from 1s. 10d. to 10d. in 1905, but increased steadily to 2s. 0½d. in 1921.

Year ended 30th June.	Length of line open.	Passengers carried.	Tram mileage.	Earnings per tram mile.	Working cost per tram mile.
	miles.	No.		s. d.	s. d.
1900	71½	66,244,334	4,355,024	2 3	1 10
1905	125½	139,669,459	16,413,762	1 0	0 10
1910	165½	201,151,021	20,579,386	1 1½	0 11½
1915	219½	289,282,845	26,842,974	1 5½	1 2½
1920	225½	324,884,651	26,889,077	2 1½	1 10½
1921	227½	337,689,873	28,654,172	2 5	2 0½

The extension of the City and North Sydney tramways since 1905 may be seen in the following statement, also the enormous increase in the passenger traffic. All lines which communicate directly with the city of Sydney are included in the category "City and Suburban"; the Ashfield, Kogarah, Arncliffe, and Rockdale lines, which act as feeders to the railways, and the Manly lines have not been included:—

Year ended 30th June.	City and Suburban.			North Sydney.		
	Length of line.	Passengers carried.	Tram mileage.	Length of line.	Passengers carried.	Tram mileage.
	miles.	No.	miles.	miles.	No.	miles.
1905	73½	120,973,934	14,413,273	11½	9,128,575	1,074,743
1910	94½	173,897,034	17,743,868	16½	13,677,491	1,651,153
1915	110½	240,545,317	22,242,010	19½	20,743,680	2,375,916
1920	113	269,255,935	21,811,695	22	25,165,376	2,705,620
1921	114½	277,687,038	23,272,165	22	26,538,591	2,859,071

## TRAMWAY ACCIDENTS.

The accidents which occurred on tramways during the quinquennial period ended 30th June, 1921, are classified in the following table, in a similar way to those relating to the railways:—

Classification.	Accidents connected with the movement of tramway vehicles.					Accidents not connected with the movement of tramway vehicles.				
	1917.	1918.	1919.	1920.	1921.	1917.	1918.	1919.	1920.	1921.
<b>Passengers—</b>										
Causes beyond their own control—										
Killed...					1					
Injured	43	57	47	157	276	2				1
Their own misconduct, or want of caution—										
Killed...	12	4	5	12	7					
Injured	297	270	226	294	345	13	13	3	7	11
<b>Servants of the Department—</b>										
Causes beyond their own control—										
Killed...					1					
Injured	74	64	87	70	37	31	36	41	79	162
Their own misconduct, or want of caution—										
Killed...	1	3	1	4	2			1		
Injured	241	207	281	246	206	322	379	438	603	651
<b>Others—</b>										
Killed...	12	13	16	19	20			1		
Injured	226	194	178	243	276	10	8	3	2	3
<b>Total</b>										
{ Killed...	25	20	22	35	31			2		
{ Injured	881	792	819	1010	1140	378	436	485	691	828

The number of passengers carried on the tramways during the year ended 30th June, 1921, was 337,689,873, and the rate of fatal accidents among passengers was only .02 per million. With one exception, the fatal accidents in the last five years were ascribed entirely to misconduct or want of caution on the part of passengers, and as the tramways usually traverse crowded streets, the number of accidents must be considered small.

The amount of compensation paid during the twelve months ended 30th June, 1921, in respect of accidents on the tramways was £32,239, as compared with £23,285 for the preceding year.



## PRIVATE TRAMWAYS.

There is only one tramway under private control within the State, viz., a steam line, which passes through the town of Parramatta, commencing at the Park and continuing as far as the Newington Wharf at Duck River, a distance of 2 miles 66 chains, where it connects with the Parramatta River steamers conveying passengers and goods to and from Sydney. The line has been constructed to the standard gauge of 4 feet 8½ inches, and was opened in 1883.

## RAILWAYS AND TRAMWAYS.

A statement of the capital cost of the State Railways and Tramways, and the result of working during the last two years, is shown below :—

Particulars.	1920.			1921.		
	Railways.	Tramways.	Total.	Railways.	Tramways.	Total.
Cost of Construction and Equipment at 30th June ..	£ 79,318,917	£ 8,768,548	£ 88,087,465	£ 82,304,194	£ 9,060,757	£ 91,364,951
Year ended 30th June—						
Earnings .. .. .	13,083,847	2,881,797	15,965,644	14,267,205	3,471,738	17,738,943
Working Expenses .. ..	9,570,934	2,486,121	12,057,105	11,082,677	2,943,252	13,975,929
Balance after paying Working Expenses .. ..	3,512,863	395,676	3,908,539	3,234,528	528,486	3,763,014
Interest on Capital .. ..	3,641,988	404,125	4,046,113	3,811,560	421,814	4,233,374
Deficit .. .. .	129,125	8,449	137,574	577,032	*106,672	470,360

\* Surplus.

## EMPLOYMENT AND WAGES.

The amount of wages paid, together with the staff employed on the Government railways and tramways in June, 1921, is shown in the following statement, in comparison with the previous year :—

Particulars.	Year ended 30th June, 1920.			Year ended 30th June, 1921.		
	Railways.	Tramways.	Total.	Railways.	Tramways.	Total.
Persons employed—						
Salaried staff ...	4,913	759	5,672	5,088	785	5,873
Wages „ ...	29,807	8,211	38,018	32,470	8,233	40,703
Total number	34,720	8,970	43,690	37,558	9,018	46,576
	£	£	£	£	£	£
Salaries paid ...	1,394,064	234,616	1,628,680	1,569,058	255,258	1,824,316
Wages paid ...	6,056,505	1,764,235	7,820,740	7,573,854	2,033,916	9,607,770
Total ...	7,450,569	1,998,851	9,449,420	9,142,912	2,289,174	11,432,086

The average number of men employed during the year ended 30th June, 1921, was 45,574, including an average of 108 employees serving with the Australian Imperial Force. The number of railway and tramway employees who joined the Australian Imperial Force was 8,477. All permanent employees were paid the difference in their pay in the railway and tramway service and in the defence forces, and under certain conditions similar terms were allowed to members of the temporary staff.

A scheme to provide superannuation allowances for the officers of the railway and tramway service was introduced in 1910, particulars of which are shown in the part of this Year Book dealing with Social Condition.

## POSTS AND TELEGRAPHS.

The postal, telegraphic, and telephonic services of New South Wales passed over to the Commonwealth, on 1st March, 1901, and on 1st November, 1902, uniform rates were established for the conveyance of newspapers and transmission of telegrams throughout Australia.

### NUMBER OF POST OFFICES, ETC.

The following table shows the number of post offices, and the postal matter carried in the State of New South Wales during the ten years ended 30th June, 1921 :—

Year.	Post Offices in New South Wales.	Receiving Offices.	Letters, Post-cards and Registered Articles.	Newspapers.	Packets.	Parcels.
1911	1,948	542	189,656,401	71,619,194	36,283,500	1,748,822
1912	2,000	559	192,996,376	68,696,648	32,687,904	2,067,652
1913	2,025	571	212,639,639	64,874,811	38,583,889	2,318,453
1914	2,049	574	217,907,644	66,216,699	34,203,574	2,372,964
1915-16	2,074	566	219,525,661	72,067,335	33,343,149	2,537,970
1916-17	2,040	548	259,185,729	68,546,782	28,230,715	2,906,090
1917-18	2,031	548	255,177,316	62,320,777	24,844,315	2,923,254
1918-19	2,037	562	240,591,473	63,337,875	22,887,484	2,977,413
1919-20	2,034	559	256,062,161	61,407,862	20,038,008	2,951,391
1920-21	2,031	578	262,025,990	63,261,430	20,931,866	3,606,927

Further particulars of the postal matter carried during the year ended 30th June, 1921, are shown below :—

Postal Matter.	Inland (Counted Once).	To and from other Australian States.	To and from Countries outside Australia.	Total.	Per Head of Population.
Letters and post-cards	191,017,115	42,534,735	25,841,588	259,393,438	124.1
Registered articles	1,768,188	528,425	335,939	2,632,552	1.3
Newspapers	43,609,316	13,294,692	6,357,422	63,261,430	30.3
Packets	14,998,432	4,000,591	1,932,843	20,931,866	10.0
Parcels	2,550,109	801,501	255,317	3,606,927	1.7

During 1920-21 the postal matter posted and received per head of population comprised—Letters, post-cards, and registered articles, 125 ; newspapers 30 ; and packets and parcels, 12.

### *Value-payable Parcel Post.*

Under a system of value-payable parcel post, the Department accepts for transmission within the Commonwealth parcels or letters sent in execution of orders, and collects from the addressees on behalf of the senders the charges due thereon. During the year ended 30th June, 1921, the number of parcels posted in New South Wales was 53,829, and the value collected was £124,502, the revenue, including postage, commission on value, registration, and money-order commission being £3,502.

## DEAD LETTERS, ETC.

The number of letters and other postal articles dealt with by the Dead Letter Office in New South Wales during the year ended 30th June, 1921, was as follows :—

How dealt with.	Letters and Post Cards.	Packets and Circulars.	Newspapers.
Returned direct to writers, or delivered ... ..	630,618	699,690	} 392,000
Destroyed in accordance with Act ... ..	86,336	130,849	
Returned as unclaimed to other States or Countries ...	144,406	5,978	
Total ... ..	861,360	836,517	392,000

## RATES OF POSTAGE.

The principal postal charges in force within the Commonwealth and Papua are at the following rates, which came into operation on 2nd October, 1920.

Letters ... ..	2d. per $\frac{1}{2}$ oz.
Letter Cards ... ..	2d. each.
Post cards—Single ... ..	1 $\frac{1}{2}$ d. each.
Newspapers—Printed and published in Australia ... ..	1d. per 10 oz.
Printed and published outside Australia ... ..	1d. per 4 oz.
Magazines—Printed and published in Australia ... ..	1d. per 8 oz.
Printed and published outside Australia ... ..	1d. per 4 oz.
Books—Printed in Australia ... ..	1d. per 8 oz.
Printed outside Australia ... ..	1d. per 4 oz.
Printed papers ... ..	1d. per 2 oz.
Commercial papers, patterns, samples and merchandise ...	1 $\frac{1}{2}$ d. per 2 oz.
Parcels (within the State) ... ..	6d. for 1 lb., and 3d. per lb. additional.

Licensed vendors of postage stamps are allowed 2 $\frac{1}{2}$  per cent. commission up to a maximum of 30s. per week. During the year ended 30th June, 1921, an amount of £5,180 was paid as commission to licensed vendors in New South Wales, the total so paid for all States of the Commonwealth being £20,033.

## MAIL SERVICES.

The number of inland mail services in New South Wales during 1920–21 was 2,267 ; the cost of road services amounted to £246,352, and of railway services to £90,131.

The Postmaster-General establishes new mail services in the country districts of the State when the persons interested provide half the difference between cost and revenue.

## OCEAN MAIL SERVICES.

A contract for the carriage of oversea mails every four weeks between Australia and the United Kingdom, was arranged by the Commonwealth Government with the Orient Steam Navigation Company for a period terminable on twelve months' notice by either party. The Peninsular and Oriental Company also conduct a similar service, under contract with the Imperial Government, and thus regular fortnightly communication *via* Suez, is assured. A subsidy of £130,000 per annum is paid to the Orient Company, and large fast steamers, fitted with refrigerating space, are employed in the service.

Mails to Europe *via* America are carried monthly by the Canadian Australian Line *via* Vancouver, calling at Auckland, Fiji, and Honolulu, subsidised by New Zealand and Canada. There is also a monthly service by the Union Steamship Company to San Francisco *via* Wellington and Tahiti, subsidised by New Zealand. American vessels of the Oceanic Steamship Company despatched every four weeks also carry mails between Sydney and San Francisco.

Mails to China, Japan, and other eastern ports are carried by various British steamships, also by the Dutch and Japanese.

A British service between Sydney and Singapore is subsidised by the Government of New South Wales, and a mail service to Lord Howe Island and Norfolk Island, Papua, Solomon Islands, New Hebrides, and the Marshall and Gilbert Islands is subsidised by the Commonwealth Government.

## TELEGRAPHS.

The electric telegraph was first used by the public of New South Wales on 26th January, 1858, when the line from Sydney to Liverpool, 22 miles in length, was brought into operation. At 30th June, 1921, there were 2,252 telegraph stations. The following table gives a view of the telegraph business transacted in New South Wales since 1911 :—

Year.	Telegraph Stations.	Telegrams.			Revenue received.
		Transmitted, and delivered (Inland counted once).	In Transit.	Total.	
1911	1,406	5,505,935	413,777	5,919,712	£ 253,398
1912	1,384	5,917,219	447,771	6,364,990	278,665
1913	1,602	6,116,945	456,722	6,573,667	297,965
1914	1,937	6,178,926	524,093	6,703,019	307,999
1915-16	2,107	6,402,092	624,992	7,027,084	331,924
1916-17	2,231	6,491,354	661,559	7,152,913	350,581
1917-18	2,237	6,870,263	728,154	7,598,417	386,919
1918-19	2,252	7,183,234	753,219	7,936,453	416,427
1919-20	2,247	8,283,993	760,105	9,044,098	455,014
1920-21	2,252	7,851,429	734,406	8,585,835	489,805

The telegrams received and despatched during the year ended 30th June, 1921, were classified as follows :—

Inland (counted once) ..	...	...	...	...	4,512,843
Interstate ..	...	...	...	...	2,825,399
To and from other countries (cablegrams) ..	...	...	...	...	513,187
In transit ..	...	...	...	...	734,406
Total ..	...	...	...	...	8,585,835

Excluding the telegrams in transit, the messages represented 3·8 per head of population.

## CABLE SERVICES.

The following statement shows the particulars of the cable lines giving communication from Sydney :—

## To Europe—

- via Darwin and Banjoewangie, Java (duplicate).
- via Perth, Cocos, and Durban.
- via Roebuck Bay and Banjoewangie.
- via Southport, Norfolk Island, Fiji, Fanning Island, and Canada.

## To New Zealand—

- via La Perouse and Nelson (duplicate).
- via Southport, Norfolk Island, and Auckland.
- via Bondi and Muriwai Creek.

## To New Caledonia—

- via Bundaberg and Gomen.

## To Tasmania—

- via Flinders and Low Head (duplicate).

## Cable Messages.

The following table gives a comparison of the cable business transacted in New South Wales during the last five years, excluding messages to and from Tasmania. Messages in transit are excluded also, but the receipts from such business are included in the amount of revenue shown.

Year.	Cable Messages.		Amount Collected.	
	Sent from New South Wales.	Received in New South Wales.	Total	Portion due to Commonwealth Government.
			£	£
1915-16	186,487	211,490	450,374	42,708
1916-17	186,143	260,284	503,587	48,107
1917-18	192,467	251,919	628,291	51,382
1918-19	196,521	274,180	899,833	67,058
1919-20	250,260	277,879	875,280	76,117
1920-21	249,705	263,482	697,892	62,461

## LETTER TELEGRAMS.

Letter telegrams were introduced in February, 1914; messages may be telegraphed during the night to certain offices and thence forwarded as ordinary letters—that is, delivered by first letter delivery, or despatched to address by mail. The messages must be written in plain language. Letter telegrams may be exchanged between any offices which are open for the receipt of ordinary business between 7 p.m. and midnight, or for ordinary or press business after 7 p.m.

## DEFERRED TELEGRAMS.

A system of deferred telegrams came into operation on 1st January, 1912, by which telegrams, written in plain language, and subject to a delay not exceeding twenty-four hours, may be sent at half ordinary rates to those countries which have adopted the service, including the United Kingdom and all British Possessions to which the rate per word is not less than 10d.,

also to the Commonwealth wireless stations in the Pacific, and to Port Moresby and Flinders Island. Besides British territories the Commonwealth exchanges deferred telegrams with a number of foreign countries.

#### WIRELESS TELEGRAPHY.

The administration of the radio service, which was under the control of the Department of the Navy for the greater part of the war period, reverted to the Postmaster-General's Department on 1st July, 1920, although the actual transfer did not take place until 28th October following. Immediate steps were taken to extend the radio service, and any person in a remote locality, where land-line facilities are unobtainable, may now obtain a license to erect and operate his own station. In any case where such a station has been erected to the satisfaction of the Postmaster-General's Department, and the financial position is sound, the Department will undertake to bring the owner into communication with the land-line system, and for this latter purpose collecting stations are now being erected.

The New South Wales radio station is at Pennant Hills, Sydney. The other stations in the Commonwealth are at Adelaide, Mount Gambier, Brisbane, Cooktown, Rockhampton, Thursday Island, Townsville, Perth, Broome, Esperance, Geraldton, Roebourne, Wyndham, Darwin, Hobart, Flinders Island, King Island, and Melbourne.

The removal of the restrictions imposed during the war was marked by a great increase in the radiogram traffic, the total number of messages handled during the year ended 30th June, 1921, being 12,731 and the revenue collected £2,481.

#### TELEPHONES.

The telephone system was established in Sydney in 1880, and exchanges have since been provided in many other important centres, the number in 1921 being 921. A telephone trunk line between Sydney and Melbourne was brought into use in 1907.

The following table shows the growth of the telephone service since 1913:—

Year.	Exchanges.	Number of Lines Connected.	Public Telephones.	Telephone Instruments connected.
1913	451	43,845	916	53,978
1914	521	49,040	1,069	62,367
1915-16	705	51,905	1,317	66,532
1916-17	765	57,553	1,421	70,058
1917-18	825	62,123	1,521	78,886
1918-19	853	65,734	1,558	84,118
1919-20	873	70,700	1,606	91,117
1920-21	921	74,490	1,693	96,710

Tests are being made of the capabilities of wireless telephony, but no commercial service has yet been instituted.

#### FINANCIAL RESULTS OF POSTAL SERVICES.

Viewing the postal services as important factors in the development of the country, any financial loss incurred in the working of the Post Office has been deemed to be counterbalanced by the national advantages gained.

The results for the whole Commonwealth during the last five years are compared in the following statement :—

Year ended 30th June.	Earnings.	Working Expenses.	Surplus.	Interest on Capital.	Net Profit. (+) Net Loss. (—)
	£	£	£	£	£
1917	5,515,769	5,134,533	381,236	558,382	(—) 177,146
1918	5,773,954	4,809,571	964,383	577,001	(+) 387,382
1919	6,158,571	5,043,891	1,114,680	590,035	(+) 524,645
1920	6,732,096	5,633,752	1,098,344	610,390	(+) 487,954
1921	8,511,494	6,724,543	1,786,951	643,183	(+) 1,143,768

The accounts for the years 1917–21 are exclusive of the figures relating to the Wireless Telegraph Branch, which was controlled by the Department of the Navy from 1st July, 1915, until 1st July, 1920.

Particulars regarding the various branches in the State of New South Wales for the year ended 30th June, 1921, were as follows :—

Branch.	Earnings.	Working Expenses.	Surplus.	Interest on Capital.	Net Profit. (+) Net Loss. (—)
	£	£	£	£	£
Postal ... ..	1,806,382	1,470,967	335,415	39,044	(+) 296,371
Telegraph (except Wireless) ...	520,239	454,147	66,092	37,629	(+) 28,463
Telephone ... ..	964,981	788,671	176,310	166,749	(+) 9,561
Total, all branches ... ..	3,291,602	2,713,785	577,817	243,422	(+) 334,395

## MINING INDUSTRY.

### SUPERVISION AND REGULATION OF MINING, ETC.

New South Wales owes much of its progress to its mineral resources. Coal was the first mineral discovered (1847); and, until gold in payable quantities was found in 1851, was the only mineral raised. During the next twenty years these two minerals constituted 95 per cent. of the value of all mineral production, but in 1873 the output of copper, and a few years later the output of tin, attained important dimensions. In 1883 the production of silver began to increase rapidly, although it was not until 1888 that its real value as a national asset was fully manifested.

Mining operations are controlled by the State Department of Mines. The functions of the Department include the administration of legal enactments relating to mining, and of the Prospecting Vote, the examination of coal-fields, the inspection of collieries and mines, geological and mining surveys and assays, and the general supervision of the mining industry.

Authority must be obtained for all operations for the mining of gold or other minerals. A miner's right, for which a fee of 5s. per annum is charged, entitles the holder to occupy Crown land for the purpose of mining for gold or other minerals, to construct works for mining purposes, to conserve water or obtain timber in connection with mining, except within exempted areas, and for residence. A business license, the fee for which is 20s. per annum, entitles the holder to occupy one-quarter of an acre of Crown land in a town or one acre outside town boundaries.

During the year 1921 there were 13,274 miners' rights and 456 business licenses issued, the fees received amounting to £2,286 and £356 respectively. In 1910 17,355 miners' rights were issued, and 1,298 business licenses were granted. The reduced figures are indicative of the general decline in the industry.

The annual rent for mining leases is 1s. per acre. A royalty of 1 per cent. of the gross value of gold and other minerals, except coal and shale, won from the land leased, and a royalty of 6d. per ton on all coal and shale, is payable to the Crown. No royalty is payable, except on coal and shale, unless the gross value exceeds £500 during the year.

Upon payment of a fee, and under certain conditions, holders of miners' rights may obtain authority to enter upon any private land to prospect for minerals and may apply for a lease for the whole or any part of the land.

Leases of Crown or of private land may be granted for the purpose of mining for gold or any mineral by dredging, sluicing, or other method.

The minimum labour conditions are as follow :—

For gold : One man to 5 acres for the first year, and thereafter one man to 2 acres. For minerals other than gold, coal, or shale : One man to 20 acres for the first year, and thereafter one man to 10 acres. For coal or shale : Two men to 640 acres, or fraction thereof.

The Mining Act provides for the suspension of the labour conditions under certain circumstances.



Certificates of competency are issued by the Minister upon the report of the examining boards to managers, under-managers, engine-drivers, and electricians.

In 1921, certificates were issued under the Coal Mines Regulation Act to 7 managers, 13 under-managers, 81 deputies, and 3 mine electricians. Under the Mines Inspection Act, 4 permits to act as managers were issued, 252 engine-drivers' certificates, and 6 licenses to test and examine boilers.

#### AREA UNDER MINING OCCUPATION.

The area under mining occupation in New South Wales at 31st December, 1921, was approximately 459,256 acres, made up as follows :—

	Acres.
Crown Lands under mining lease ... ..	229,367
„ „ „ lease for mining purposes ... ..	5,409
„ „ „ application for mining lease ... ..	49,580
„ „ „ „ „ lease for mining purposes ... ..	1,323
Private Lands under mining lease ... ..	29,663
„ „ „ lease for mining purposes ... ..	549
„ „ „ application for mining lease ... ..	12,973
„ „ „ „ „ lease for mining purposes ... ..	240
„ „ „ authority to enter ... ..	48,441
„ „ „ agreement ... ..	30,463
Dredging Lands under application for lease ... ..	1,327
Miner's Right and Business License ... ..	18,719
Authority to Prospect ... ..	5,224
Under application for Authority to Prospect ... ..	24,810
Other Mining Titles... ..	1,168
Total ... ..	<u>459,256</u>

The total number of applications received during 1921 by the Department of Mines for leases and authorities to prospect was 974, relating to 139,625 acres. Of these, 626 applications, covering 102,277 acres, related to Crown lands, and 324 applications, covering 36,074 acres, related to private lands. The remaining 24 applications, covering 1,274 acres, related to both Crown and private lands.

The applications approved during 1921 under the Mining Act were as follows :—

Classification.	Applications.	Aggregate Area.	Classification.	Applications.	Aggregate Area.
	No.	Acres.		No.	Acres.
Crown Lands—			Private Lands—		
Mining Leases... ..	385	21,759	Mining Leases... ..	212	5,463
Leases for mining purposes... ..	32	379	Leases for mining purposes... ..	25	240
Authorities to prospect	16	3,487		237	5,703
			Crown & Private Lands—		
			Dredging Leases ... ..	33	1,434
	433	25,625	Total ... ..	703	32,762

Authorities to enter numbering 938, and covering 64,853 acres, were issued during 1921.

The following is a statement of the expenditure by the State from the Consolidated Revenue Fund on account of services in connection with mining during the years ended 30th June, 1917-21.

Head of Service.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Department of Mines ... ..	49,490	50,242	50,163	52,071	58,944
State Colliery, Lithgow ... ..	942	325	170	236	172
Geological Survey Laboratory ... ..	196	124	196	324	403
Miners' Accident Relief Branch ... ..	1,521	1,389	1,369	1,143	...
Administration of the Act for Regulation of Coal Mines and Collieries ... ..	415	321	332	405	740
To promote prospecting for gold and other minerals* ... ..	7,162	8,328	9,575	8,352	7,746
Royal Commission—Coal Mining Industry ... ..	...	...	...	9,282	3,537
To acquire, erect, work, and maintain and to assist in the erection of crushing batteries† ... ..	231	5	250	...	...
Bores to prove coal seams under Reserves ... ..	52	...	...	...	...
Detonators and explosives ... ..	2,096	554	54	...	...
Miscellaneous ... ..	320	453	636	1,608	517
Total ... ..	62,425	61,744	62,745	73,421	72,059
Endowment Miners' Accident Relief Act ... ..	11,561	3,275	...	...	...
State Coal Mines Act ... ..	825	1,000	1,000	861	1,000
Total ... ..	74,811	66,019	63,745	74,282	73,059

\* These amounts are to be refunded if, in the opinion of the Prospecting Board, minerals are won in payable quantities, or if the mines otherwise prove profitable to the prospectors.

† To be repaid in accordance with agreements.

### PROSPECTING.

Subsidies are granted by the Government to encourage prospecting for minerals. The Prospecting Board, consisting of the Under Secretary for Mines as Chairman, the Government Geologist, the Chief Inspector of Mines, and three Inspectors, the Chief Mining Surveyor, and a Geological Surveyor, deals with all applications for aid, and miners desiring a grant from the Prospecting Vote must satisfy the Board that the locality to be prospected is likely to yield the mineral sought, and that the mode of operation is suitable for its discovery. Miners assisted from the vote are not entitled to claim any reward that may be offered for the discovery of a new gold or mineral field.

Under the regulations governing the distribution of the vote, the amount advanced must be refunded in the event of the discovery of payable mineral by means of the aid granted.

The following statement summarises the amounts allotted to prospectors for the various minerals ; the figures are for calendar years from 1887, to 1895 and thereafter for the years ended 30th June :—

Period.	Amounts allotted to Prospectors for—						
	Gold.	Silver and Lead.	Copper.	Tin.	Coal.	Other Minerals.	Total.
	£	£	£	£	£	£	£
1887-1889	26,332	886	138	34	338	283	28,011
1890-1894	111,878	7,254	1,367	1,261	3,752	3,283	128,795
1895-1900	107,581	4,886	7,762	3,389	...	4,021	127,639
1901-1905	80,636	5,108	10,136	7,828	40	1,430	105,178
1906-1910	38,822	7,986	20,765	3,146	310	871	71,900
1911-1915	50,209	7,557	8,939	5,870	...	4,837	77,412
1916-1920	32,976	4,325	10,057	3,978	90	5,829	57,255
1921	7,375	889	1,330	901	863	1,285	12,643
Total ...	455,809	38,891	60,494	26,407	5,393	21,839	608,833

No large payable field has yet been discovered through the agency of the Prospecting Vote.

In addition to the employment of labour, the proving of a lode or reef invariably leads to the development of large areas of adjoining land under the Mining Act, from which increased revenue is derived by the State.

#### EMPLOYMENT IN MINES.

The extent to which mining industries provide employment is indicated in the following statement of the approximate number of men employed as at 31st December, 1917-1921 :—

Year.	Metalliferous.						Coal and Shale.	Total number of men employed.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total.		
1917	1,823	7,619	2,074	1,779	2,184	15,479	17,338	32,817
1918	2,540	7,585	1,529	2,352	2,731	16,737	16,926	33,663
1919	1,656	6,556	1,148	2,171	2,750	14,281	18,178	32,459
1920	1,712	1,931	583	1,822	3,150	9,198	19,965	29,163
1921	1,516	3,150	109	1,321	2,340	8,436	21,265	29,701

These figures do not include persons employed in works manufacturing lime, cement, or coke. Comparing the figures for 1921 with those of the previous year, there was an increase of 538 in the total number employed. In coal and shale mines 1,300 more miners were employed, and in metalliferous mines 762 less.

#### MINERAL PRODUCTION.

The statistics of mineral production are incomplete, and in many instances the export trade is taken as the measure of the output. Comparison of the output of the several minerals is difficult also, as regards quantity, by reason of the variety of units of measurement employed in the different branches of the mining industry, and, as regards value, by the difference in the stages of production at which the values are assessed. For instance, the value of the tin output represents the values of ingots and of ore, and with other metals, the export, which is accepted as representing the production, is mainly in ore.

Measured by the aggregate output, coal is the most valuable mineral in New South Wales, followed by silver and gold.

The summary given below shows the output and the value of the production for the year 1921, and for the whole period since the commencement of mining operations to the end of that year.

Minerals.	During 1921.		To the end of 1921.	
	Quantity.	Value.	Quantity.	Value.
<i>Metals.</i>				
Gold—Domestic Ores ...	oz. fine. 51,173	£ 217,370	oz. fine. 14,848,717	£ 63,073,303
Silver—	oz.		oz.	
Silver Ingots and Matte ...	1,963,379	325,163	44,443,935	5,954,525
Lead Ore, Concentrates, &c. ...	tons. 53,507	539,339	tons. 9,373,225	77,158,978
Lead—Pig, &c. ...	20,353	462,862	318,507	6,247,685
Zinc—				
Spelter ...	...	...	1,003,756	} 13,699,234
Concentrates ...	79,694	283,455	4,509,926	
Copper—				
Ingots, Matte, and Regulus ...	} 499	41,267	261,620	15,297,345
Ore ...				
Tin—				
Ingots ...	} 1,595	163,451	125,564	12,505,748
Ore ...				
Iron—				
Pig-iron—from Domestic Ore..	90,053	639,376	958,219	5,346,288
Iron Oxide ...	3,109	2,917	45,791	57,456
Ironstone Flux...	7,473	9,132	131,675	107,517
Tungsten—				
Wolfram ...	...	...	2,260	267,450
Scheelite ...	...	...	1,690	192,375
Platinum ...	oz. 249	3,441	oz. 15,938	67,847
Molybdenite ...	tons. ...	...	tons. 799	205,500
Antimony—Metal and Ore ...	125	900	19,032	344,588
Bismuth—Metal and Ore ...	8	912	768	223,840
Chrome ...	62	124	34,712	110,827
Magnesite ...	12,268	14,407	35,331	55,937
Manganese—Ore ...	3,515	10,545	23,430	38,630
<i>Non-metals.</i>				
Fuels—	tons.		tons.	
Coal ...	10,793,387	9,078,388	267,473,919	114,946,009
*Coke ...	592,097	1,029,694	7,119,353	6,874,440
Shale (Oil) ...	32,489	77,380	1,894,369	2,626,276
Structural Materials—				
Limestone—Flux ...	111,558	41,834	1,808,653	927,392
†Marble ...	...	2,100	...	42,798
Slates ...	...	...	...	8,553
Alunite ...	520	2,080	54,887	195,587
Gem Stones—				
Noble Opal ...	...	13,020	...	1,511,204
Diamonds ...	cts. 1,563	1,915	cts. 200,499	142,184
Silica ...	tons. 18,909	37,818	tons. 75,805	151,293
Other Minerals and Ores ...	...	97,174	...	487,837
Total value ...	...	13,096,064	...	328,868,646
Other—				
Iron made from scrap ...	...	...	...	1,416,030
*Portland Cement ...	155,284	838,534	1,890,876	6,214,823
*†Lime ...	33,620	84,050	586,315	755,562

\* Quantity manufactured and value. † Includes value of quantity exported (only) to end of 1901.

‡ Includes quantity exported (only) up to end of 1899.

The value of the mineral production in quinquennial periods since 1856 is shown in the following table; the figures are exclusive of iron made from scrap, Portland cement, and lime, which are included in the production of the manufacturing industry:—

Period.	Value of Production.	Period.	Value of Production.
	£		£
1856-1860	6,069,118	1891-1895	26,324,780
1861-1865	9,980,397	1896-1900	26,159,491
1866-1870	7,001,454	1901-1905	29,880,914
1871-1875	10,768,230	1906-1910	42,450,535
1876-1880	9,184,015	1911-1915	51,930,852
1881-1885	12,381,842	1916-1920	57,035,734
1886-1890	18,681,548	1921	13,096,064

#### VALUE OF MACHINERY.

The following statement shows the estimated value of the plant and machinery used in mining during the years 1917 to 1921:—

Classification.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Coal and Shale ...	3,719,000	3,885,000	4,039,000	5,010,000	6,637,000
Gold ...	441,624	426,719	369,804	667,196	344,063
Silver, Lead, & Zinc ...	1,238,072	1,296,623	1,677,314	1,240,515	1,882,101
Copper ...	579,332	584,652	649,198	382,737	114,293
Tin ...	273,789	326,536	364,598	425,062	396,542
Other Minerals ...	592,034	1,012,074	1,084,678	1,114,319	804,742
Total ...	6,843,851	7,531,604	8,184,592	8,839,829	10,178,741

The value of treatment plants belonging to or at the sites of the mines is included in the above figures.

The value of plant and machinery used in connection with coal and shale mines includes the value of plant used for conveying coal and shale from the mines to wharf or railway station; the amount in 1921 was £2,561,000.

#### QUARRIES.

The quantities and values of building stone, except stone exported, do not appear in the statements of mineral production, but are given hereunder in the return of quarries for the year 1920-21:—

Description of Quarry.	Quantity of Stone raised.	Value of Stone raised.	Description of Quarry.	Quantity of Stone raised.	Value of Stone raised.
<b>Building Stone—</b>	tons.	£	<b>Macadam, Ballast, etc.—</b>	tons.	£
Sandstone ...	77,125	30,734	(continued).		
Alunite ...	...	...	Gravel ...	53,197	11,845
Syenite (Trachyte) ...	3,560	3,991	Sand ...	56,376	10,593
Marble ...	1,940	3,510	Ironstone ...	73,861	16,542
Limestone ...	16,927	6,001	Shale and Clay ...	35,254	6,452
Slate ...	80,000	1,600	Quartzite ...	59,551	19,639
Other ...	20,744	9,128	Granite ...	3,984	1,089
<b>Macadam, Ballast, etc.—</b>			Limestone, crude ...	133,437	29,329
Sandstone ...	311,407	54,315	Magnesite ...	5,846	5,099
Bluestone, Basalt, etc. ...	830,234	213,792	<b>Clays—</b>		
Limestone ...	51,731	13,736	Kaolin ...	422	580
			Fireclay ...	103	26

## PRICES OF METALS.

In the case of the minerals which contribute any considerable value to the production, the prices of all are regulated by the world's production in relation to the world's demands, as, with the exception of coal, the local demand is small.

The quotations in the following table for silver, lead, copper, and tin are the average f.o.b. prices, Sydney, based on the London prices. In the case of zinc, the averages are those quoted by the Department of Mines in connection with the Broken Hill field:—

Year.	Silver.	Lead.	Zinc.	Copper.	Tin.
	per oz. s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.
1913	2 3·6	18 15 0	22 13 6	68 13 4	202 5 0
1914	2 1·3	19 1 8	21 0 0	60 16 8	153 0 0
1915	1 11·8	22 19 2	68 19 7	73 0 0	164 17 1
1916	2 7·3	31 1 8	71 18 6	115 15 0	181 15 0
1917	3 4·8	30 10 0	54 0 0	125 3 4	237 16 8
1918	3 11·5	30 11 8	54 3 11	115 16 8	322 6 8
1919	4 9	28 10 2	42 5 2	90 18 2	239 5 3
1920	5 1·5	37 18 7	45 4 5	97 12 2	296 4 4
1921	3 0·8	22 14 11	26 4 1	69 8 5	165 9 2

In regard to coal, average prices are quoted in connection with the values of production on page .

## GOLD.

Amongst the metals which occur in the State, gold occupies an important place, both on account of the quantity which has been raised and of the influence of its discovery on the settlement of the country.

The following table shows the quantity and value of the gold produced during each decennial period since 1851:—

Period.	Quantity.	Equivalent in oz. fine.	Value.
	oz. crude.	oz. fine.	£
1851-1860	3,280,963	2,714,531	11,530,583
1861-1870	3,542,912	3,219,628	13,676,102
1871-1880	2,253,259	2,019,116	8,576,655
1881-1890	1,173,885	1,013,846	4,306,541
1891-1900	2,867,337	2,432,387	10,332,120
1901-1910	2,669,670	2,252,851	9,569,492
1911-1920	1,333,796	1,145,185	4,864,440
1921	55,683	51,173	217,370
Total ...	17,177,505	14,848,717	63,073,303

Prospecting for gold has been neglected in recent years owing to the remunerative employment to be obtained in other industries.

## GOLD AND TIN DREDGING.

Dredging is in operation on practically all the rivers of New South Wales which drain auriferous country. In addition, alluvial tin deposits are exploited, and for many years the value of stream-tin won annually has greatly exceeded the value of gold recovered by dredging.

In 1921 there were 62 dredges, of a total value of £310,130; 11 bucket dredges and 1 pumping plant were employed in the recovery of gold, and 3 bucket dredges and 47 pumping plants in the winning of stream-tin.

The following table demonstrates the value of the metals recovered by dredging since its inauguration in this State :—

Period.	Area under Lease at end of period.	Gold Dredged.			Stream-tin Dredged.		Total Value.
		Quantity.		Value.	Quantity.	Value.	
	acres.	oz. crude.	oz. fine.	£	tons.	£	£
1900	6,043	8,882	7,924	33,660	...	..	33,660
1901-05	13,571	144,028	129,850	551,568	1,254	109,026	660,594
1906-10	16,442	185,140	168,566	716,025	7,570	732,134	1,448,159
1911-15	8,210	120,082	110,284	468,459	7,551	907,582	1,376,041
1916-20	18,032	103,651	96,817	411,250	5,878	963,271	1,374,521
1921	...	13,191	12,715	54,009	768	76,550	130,559

#### SILVER, LEAD AND ZINC.

The output of lead and zinc in New South Wales is obtained principally from the silver-lead mines of the Broken Hill district, and for that reason the mining of these metals is discussed conjointly.

Assessment of the total output and value of production of silver-lead ores mined in New South Wales is hampered by the fact that the process of extracting the metallic contents has been conducted for the most part outside the boundaries of the State. For this reason the value of the output credited to New South Wales does not represent the value of the finished product, but the estimated net value of the ore, concentrates, bullion, etc., as declared by the several companies to the Customs Department at the date of export from the State.

Calculated on this basis the quantity and value of New South Wales silver and silver-lead ore exported to the end of 1921 are shown in the following table :—

Period.	Silver.		Silver-sulphide, Silver-lead, Ore, etc.				Total Value Exported.
	Quantity.	Value.	Quantity.		Value.		
			Ore Concentrates, etc.	Metal.			
To 1885	oz.	£	tons.	tons.	£	£	
1886-1890	1,730,297	382,884	7,073	191	237,810	620,694	
1891-1895	2,481,253	464,081	165,756	94,002	6,478,515	6,942,596	
1896-1900	3,009,187	445,873	663,754	231,847	12,615,432	13,061,305	
1901-1905	2,352,092	269,663	1,771,983	86,005	9,592,856	9,862,519	
1906-1910	4,154,020	445,051	1,877,515	108,353	8,910,586	9,355,637	
1911-1915	8,310,962	892,414	1,709,173	42,578	11,561,794	12,454,208	
1916-1920	12,460,553	1,302,510	1,694,834	...	14,302,570	15,605,080	
1921	7,982,192	1,426,886	866,654	...	12,920,076	14,346,962	
	1,963,379	325,163	53,507	...	539,339	864,592	
Total	... 44,443,935	5,954,525	8,810,249	562,976	77,158,978	83,113,503	

Similar information regarding the export of lead (pig, in matte, also lead-carbonate and lead-chloride), the product of New South Wales, is shown below; for 1907 and subsequent years the quantity as recorded represents the contents, based on average assays, of bullion produced within the State :—

Period.	Lead—Pig, in matte, etc.		Period.	Lead—Pig, in matte, etc.	
	Quantity.	Value.		Quantity.	Value
	tons.	£		tons.	£
1889-1890	648	8,298	1911-1915	114,375	1,899,601
1891-1895	739	7,413	1916-1920	80,115	2,358,625
1896-1900	13,293	258,874	1921	20,353	462,862
1901-1905	17,550	255,366			
1906-1910	71,435	996,646	Total ...	318,508	6,247,685

The following statement shows the quantity and value of zinc concentrates, the product of domestic ores, exported since 1889. These exports represent practically the total production :—

Period.	Zinc Concentrates.		Period.	Zinc Concentrates.	
	Quantity.	Value.		Quantity.	Value.
	tons.	£		tons.	£
1889-1890	307	3,366	1911-1915	2,093,783	6,861,489
1891-1895	663	7,677	1916-1920	553,628	2,195,599
1896-1900	137,931	146,023	1921	79,694	283,455
1901-1905	133,782	440,402			
1906-1910	1,460,138*	3,761,223	Total ...	4,509,926	13,699,234

\* Includes 1,003,756 tons of Spelter.

The production of silver, lead, and zinc is seen in the following summary of the values during the last five years :—

Year.	Silver, Silver-lead, Concentrates, Ores, etc.	Lead (Pig, etc.)	Zinc Concentrates.	Total Production.
	£	£	£	£
1917	4,493,565	616,531	441,486	5,551,582
1918	5,131,167	608,342	295,413	6,034,922
1919	1,323,663	324,215	247,395	1,895,273
1920	113,576	9,905	249,456	372,937
1921	864,502	462,862	283,455	1,610,819

In 1918 the value of production was the highest on record owing to the favourable metal market and to the settled industrial conditions which



prevailed throughout the year, but the rate of production was not maintained during 1919 and 1920, on account of industrial troubles in the Broken Hill district, and the value of production dropped by more than £1,500,000 in the latter year. In 1921, however, the output reached a value of £1,610,819.

As previously stated, the bulk of the ores produced in the silver-lead mines is exported for treatment outside the State and the figures shown in the preceding tables do not convey an adequate idea of the importance of the mines of New South Wales. The Department of Mines has collected independent records from the various mining and smelting companies and ore-buyers with the object of ascertaining the actual value accruing to the Commonwealth from the silver-lead mines of this State. Thus particulars have been obtained regarding the quantity and value of the silver, lead, and zinc extracted within the Commonwealth, and the gross metallic contents of concentrates exported overseas have been estimated on the basis of average assays as follows :—

Year.	Metal obtained within Commonwealth from ores raised in New South Wales.					Concentrates exported.					Total Value of Production from Silver-lead Ores of New South Wales.
	Silver.	Lead.	Spelter.	Aggregate Value.	Quantity.	Contents by average assay.			Assessed Value.		
						Silver.	Lead.	Zinc.			
	oz. fine.	tons.	tons.	£	tons.	oz. fine.	tons.	tons.	£	£	
1917	7,562,286	138,006	4,604	5,765,094	94,586	983,693	6,181	43,912	663,934	6,434,028	
1918	8,724,018	155,306	5,622	6,744,034	48,494	535,943	3,178	21,926	232,210	6,976,244	
1919	5,836,947	80,175	7,119	4,109,466	38,740	417,871	2,425	18,146	253,751	4,363,217	
1920	196,111	1,719	10,565	515,728	46,425	479,221	3,025	21,742	274,061	789,789	
1921	3,624,413	47,426	1,425	1,723,864	47,127	617,477	6,539	19,272	261,238	1,985,102	

The following table shows the quantities and values of silver, lead, and spelter obtained within the Commonwealth from ores raised in New South Wales :—

Metal.	1920.		1921.	
	Quantity.	Value.	Quantity.	Value.
Silver...	oz. fine. 196,111	£ 47,243	oz. fine. 3,624,413	£ 600,335
Lead ...	tons. 1,749	60,979	tons. 47,426	1,078,096
Spelter ...	10,565	407,506	1,425	45,433

In connection with the above figures, although the metallic contents are based on average assays, it is impossible to give the proportion of the bulk quantities which was recovered. In the case of the lead and zinc contents, the quantities have been estimated only when payment was allowed for them.

It is estimated that the quantity and value of silver yielded by the mines of New South Wales during 1921, and to the end of 1921, were as shown in the following table:—

Metal.	Year ended 30th December, 1921.		To 31st December, 1921.	
	Quantity.	Value.	Quantity.	Value.
Obtained in the Commonwealth...	oz. fine. 3,624,413	£ 600,335	oz. fine. 184,418,921	£ 28,224,003
Contained in Concentrates, &c., exported	617,477	102,269	180,436,699	27,490,326
Total...	4,241,890	702,604	364,855,620	55,714,329

The mines on the Broken Hill field are the chief contributors to the silver and silver-lead and zinc output of Australia. The argentiferous lead ores of the Barrier Ranges and Broken Hill districts were discovered in 1883. The field extends over 2,500 square miles of country, and has developed into one of the principal mining centres of the world. It is situated in western New South Wales, beyond the River Darling, and on the confines of South Australia.

The Broken Hill lode is the largest yet discovered; it varies in width from 10 feet to 200 feet, and may be traced for several miles, the country having been taken up all along the line of lode, and subdivided into numerous leases, held by mining companies and syndicates.

During 1921 the output of ore from the Broken Hill mines amounted to 317,333 tons, viz., 1,031 tons of oxidised and 316,302 tons of sulphide ore.

The total value of the mineral output of the Barrier district during 1921 was estimated at £1,743,586, as compared with £282,516, in 1920. In addition, the treatment of zinc tailings in 1921 yielded an output valued at £634,605, bringing the total production of the Broken Hill field to £2,378,191 for the year; the amount distributed to shareholders was £326,864.

To the end of the year 1921 the value of production by the mines on the Broken Hill field from the inception of operations was £113,896,363, and the dividends and bonuses paid amounted to £26,836,584.

Next in importance is the Burragorang field in the Yerranderie Division. In this field rich galena occurs in bunches, but the deposits are very variable in width and composition. Owing to the excessive cost of transport, only high-grade ore is sent away, and a considerable quantity of second-grade is left in the mines or dumped at the surface for future treatment. During 1921, 2,912 tons of ore were raised and sold; the metallic contents were gold 343 oz., silver 250,000 oz., and lead 552 tons; the net value received was £50,574.

Among the other fields which contributed to the output of silver-lead ores in 1921 are the Sunny Corner Division, which produced 1,200 tons of ore, the Leadville Division, which produced 120 tons of ore, and the Tingha Division, which produced 1,080 oz. of silver, valued at £162, and 1 ton of copper, valued at £66.

#### COPPER.

Copper is found chiefly in the central part of the State between the Macquarie, Bogan, and Darling Rivers. Deposits occur also in the New England and Southern districts, as well as at Broken Hill, thus showing a wide distribution.

The copper lodes of New South Wales contain ores of a high grade as compared with those of many well-known mines worked in other parts of

the world; and, given a fair price and transportation facilities, are capable of yielding satisfactory returns. The net export of copper ingots, matte, regulus, and ore, is taken as the production of the State. The quantities and values are shown below from the year 1858:—

Period.	Ingots, Matte, and Regulus.		Ore.		Total Value.
	Quantity.	Value.	Quantity.	Value.	
	tons.	£	tons.	£	£
1858-1879	14,877	1,015,206	2,102	52,464	1,067,670
1880-1884	23,715	1,553,651	19	675	1,554,326
1885-1889	15,160	771,867	537	6,937	778,804
1890-1894	10,195	434,537	1,738	20,228	454,765
1895-1899	25,408	1,280,841	852	5,253	1,286,094
1900-1904	32,173	1,907,540	8,791	108,500	2,014,040
1905-1909	41,425	2,940,886	3,057	31,367	2,972,253
1910-1914	42,277	2,443,385	9,815	86,169	2,529,554
1915-1919	22,626	2,403,884	5,064	66,710	2,470,594
1920	1,290	127,978	.....	.....	127,978
1921	499	41,267	.....	.....	41,267
Total ...	229,645	14,921,042	31,975	376,303	15,297,345

The Cobar mines constituted the chief centre of the copper-mining industry, but the operations of Great Cobar, the principal mine, came to an end during 1920. The closing of the mine was due to the fall in the price of copper in 1919, higher wages, increased shipping and railway freights, exchange, and the high cost of treatment of copper matte.

During 1921 the Electrolytic Refining and Smelting Company of Australia, Ltd., Port Kembla, produced 499 tons of copper from domestic ores, valued at £41,267.

#### TIN.

Tin, unlike copper, is restricted in its geographical and petrological range, and is the rarest of the common metals in commerce.

In addition to alluvial deposits, tin ore occurs *in situ* in granite and adjacent contact rocks, usually occupying fissures or penetrating walls; the majority of the tin lodes discovered in the State are on a small scale, but the lodes, developed or undeveloped, are very numerous. The maximum depth attained in the tin lodes of New South Wales is about 360 feet.

Tin ore occurs in the extreme Northern, Southern, and Western divisions, but the proved area of workable quantities is limited practically to the western fall of the New England Tableland, with Emmaville and Tingha as the chief centres, and to Ardlethan in the Southern District.

Tin has contributed in a very considerable degree to the total production of the mineral wealth of the State, although its aggregate yield, in point of value, is below that of coal, silver, gold, copper, or zinc. In 1921, 1,595 tons of ore, valued at £163,451, were produced.

The output and the value of production of tin since 1872 have been as follows :—

Period.	Ingots.		Ore.		Total Value.
	Quantity.	Value.	Quantity.	Value.	
	tons.	£	tons.	£	£
1872-1879	18,364	1,386,764	12,995	628,643	2,015,407
1880-1884	22,842	2,056,778	2,700	137,755	2,194,533
1885-1889	12,974	1,330,326	1,635	85,048	1,415,374
1890-1894	7,196	628,096	1,040	49,291	677,392
1895-1899	4,608	336,015	197	6,488	342,503
1900-1904	4,220	536,084	1,222	81,362	617,446
1905-1909	5,567	851,956	3,712	339,679	1,191,635
1910-1914	4,258	785,900	6,952	775,841	1,561,741
1915-1919	5,203	1,188,995	5,798	723,477	1,912,472
1920	...	...	2,486	413,794	413,794
1921	...	...	1,595	163,451	163,451
Total	85,232	9,100,914	40,332	3,404,834	12,505,748

#### IRON AND IRON ORES.

Iron ore of good quality occurs in many parts of New South Wales, and it has been estimated that the minimum quantity of ore in known deposits exceeds 53,000,000 tons.

The most extensive deposits are those at Cadia, 39,000,000 tons; Carcoar, 3,000,000 tons; Wingello, 3,000,000 tons; Goulburn, 1,022,000 tons; and Queanbeyan, 1,000,000 tons.

Prior to 1907 iron ore was mined principally for use as flux in smelting other ores, although in 1848, at Mittagong, and in later years at Lithgow, the production of pig iron from locally raised ores had been attempted without permanent success. Since 1907, following the reorganisation and remodelling of the Eskbank Ironworks, Lithgow, the production of iron ore has been on a more extensive scale, although only the Bredalbane, Cadia, Carcoar, and Tallawang deposits have been mined. The whole of the iron ore used in the production of pig iron at the Lithgow works is obtained from these sources.

The production of pig iron since 1907, and the materials used therein, are shown in the following table :—

Year.	Minerals Used.			Pig-iron.	
	Iron Ore.	Coke.	Limestone.	Production.	Value.
	tons.	tons.	tons.	tons.	£
1907-11	263,477	191,589	113,360	152,627	567,048
1912-16	486,929	385,014	172,532	283,264	1,035,302
1917-21	671,153	578,938	282,984	370,187	2,327,908

The minerals used during the year ended 1921 were iron ore, 168,385 tons; coke, 130,561 tons; and limestone, 6,881 tons; the production of pig iron therefrom being 90,053 tons; value, £639,376.

Further details relating to the operations of ironworks are given in the section of this book dealing with the manufacturing industry.

#### Ironstone Flux.

Varying quantities of iron ore have been despatched from the different producing centres to the smelting and iron works for use as flux, the estimated quantity raised during the years 1899 to 1921 being 131,675 tons, valued at £107,517. During the years 1913-15 no ironstone flux was raised for fluxing purposes. The quantity produced during 1921 was 7,473 tons, valued at £9,132.

*Iron Oxide.*

Parcels of iron oxide are sent from the Port Macquarie, Mittagong, and Goulburn districts to various gas-works for use in purifying gas, the output of iron oxide during 1921 being 3,109 tons, valued at £2,917.

The total recorded output to the end of 1921 was 45,791 tons, valued at £57,456.

## OTHER METALS.

*Platinum.*—Platinum occurs in several districts of New South Wales, but platinum mining, in comparison with other branches of mining, and for less valuable ores, is unimportant. The quantity produced to the end of 1920 amounted to 15,938 oz., valued at £67,487, of which 249 oz., valued at £3,441, were obtained during 1921.

*Chromite.*—Chromite, or chromic iron ore, is the only commercially important ore of chromium which is an accessory constituent of a variety of minerals; it has been found usually associated with serpentine in the northern portion of New South Wales. The quantity produced to the end of 1921 was 34,712 tons, valued at £110,827; the yield recorded in 1921 was 62 tons, valued at £124.

*Cobalt and Nickel.*—Cobalt and nickel are usually associated in the same minerals, and traces of both metals have been found in several districts in New South Wales, but workable quantities have been located in very few places. The value of the total production of cobalt to the end of 1921 was £8,065, representing 885 tons of ore. No production of nickel is recorded.

*Tungsten ores.*—These ores are generally associated in New South Wales with tinstone (cassiterite), bismuth, and molybdenite. The output of scheelite from 1903 to the end of 1921 amounted to 1,690 tons, valued at £192,375, and of wolfram to 2,260 tons valued at £267,450. There was no production in 1920.

*Antimony.*—The principal source of supplies is at Hillgrove. For the whole State in 1921 there were 125 tons raised, the value being £900. The total output to the end of the year 1921 was 19,032 tons, valued at £344,588.

*Manganese.*—Manganese ores have been discovered in various places but generally in localities lacking transport facilities. During the year 1921 the quantity obtained was 3,515 tons, valued at £10,545.

*Bismuth.*—Bismuth has been found associated with molybdenite, tin, and gold in quartz veins, chiefly in the neighbourhood of Glen Innes, and in other districts bismuth is associated with molybdenite and wolfram ores. The total quantity produced in 1921 was 8 tons, valued at £912, the quantity produced to the end of 1921 being 768 tons of ore, valued at £223,840.

*Molybdenum.*—There was no production of molybdenite, the principal ore of molybdenum, in New South Wales during 1921. Since 1902 there have been produced 799 tons, valued at £205,500.

*Mercury.*—Cinnabar, the most important ore of mercury, occurs in numerous localities, but it has not been discovered in a sufficiently concentrated form to enable it to be profitably wrought. No production of quicksilver was recorded in the year 1921, but the total production to the end of 1921 is stated to be 2,970 lb., valued at £541.

## DECLINE IN THE METALLIFEROUS INDUSTRY.

In October, 1920, a Select Committee was appointed to inquire into and report upon the serious decline in the metalliferous industry.

The Committee made a comprehensive inquiry into the matter and in their report gave the following reasons for the decline:—High cost of production; deterioration in ore values in mines already discovered and developed; shortage and inefficiency of machinery for the treatment of ores now in sight; high freights, both railway and road; high treatment charges; want of better labour conditions in mines, particularly in respect to health, such as ventilation; lack of new discoveries of a payable nature; the want of a more encouraging, practical, and sympathetic system of prospecting.

The Committee also made the following recommendations, *inter alia*, for the revival and maintenance of the industry:—That the whole of the revenue received by the Mines Department, less administrative costs, should be spent on the revival of the industry: that a comprehensive geological survey of the State should be made; that Prospecting Boards should be established in the metalliferous areas of the State; that the Government should erect a modern and comprehensive central treatment plant for the treatment of all ores, particularly those of a complex and refractory nature, and should establish suitable treatment plant, such as batteries and concentration plants, in approved localities; that a scheme should be formulated whereby crude ores might be carried on the railways at a very much reduced rate.

#### COAL.

The coal-fields of New South Wales are the most important in Australia, both as regards extent and the quantity and quality of coal produced.

The main coal basin extends along the coast from Port Stephens on the north, to Ulladulla on the south, and thus has a seaboard of 200 miles, which enhances the value of the deposits by conducting to easy shipment and the development of oversea trade. From Ulladulla the basin trends inland to the west, and north-west as far as Rylstone, whence the boundary line extends northward beyond Gunnedah, and then runs in a south-easterly direction to Port Stephens. The widest part of this area is between Rylstone and Newcastle—100 miles; the basin is deepest in the neighbourhood of Sydney, where the uppermost seam is nearly 3,000 feet below the surface.

From Sydney the measures rise gradually in all directions, and emerge to the surface at Newcastle on the north, at Bulli in the Illawarra district to the south, and at Lithgow, in the Blue Mountain region, to the west.

The upper or Newcastle coal measures show the greatest surface development. Their seams outcrop at Newcastle, Bulli, and Lithgow, and extend continuously under Sydney, the deepest portion of the basin.

In the northern coal-field twelve seams have been discovered in these measures, five being worked; in the southern, five distinct seams are known, but two only have been worked; of the seven seams traced in the western field three only have proved of commercial value. After many unsuccessful boring operations, the uppermost seam of the Newcastle measures was located under Sydney Harbour in 1891, and was worked for some years at a depth of nearly 3,000 feet, but the mine is now closed.

The coal obtained at Newcastle is specially suitable for gas making and for household use; the coal from Bulli and Lithgow is essentially steam coal—the southern produces a strong coke, specially suitable for smelting purposes by reason of its capacity for sustaining the weight of the ore burden in a blast furnace, and it contains less ash than the western. The coal obtained at the Sydney Harbour Colliery was also a good steam coal, and could be loaded direct into oversea steamers from a wharf near the pit's mouth.

In the western and southern fields the upper coal measures contain deposits of kerosene shale, a variety of torbanite, cannel coal, or boghead mineral. It is used extensively for the manufacture of kerosene oil, and for the production of gas. Deposits of kerosene shale, though much less extensive, occur in the upper and Greta measures of the northern coal-field.

The middle coal measures outcrop near East Maitland, but do not appear in the western field; their occurrence in the southern field has not been definitely proved.

The lower or Greta measures outcrop over an irregular area in the neighbourhood of Maitland, and have been traced with intervening breaks as far north as Wingen; they occur as an isolated belt to the north of Inverell, and extend through Ashford, almost to the Queensland border. These measures have been located in the Clyde Valley, in the extreme southern portion of the Illawarra field, but do not occur in the western. The coal of the Greta measures is contained in two seams, and is the purest and generally the most useful obtained in the State, being of a good quality, hard, and economical as regards working. The Greta seams are worked extensively between West Maitland and Cessnock, in the most important coal-mining district in Australia.

There were 151 coal-mines and 3 shale-mines working under the provisions of the Coal and Shale Mines Regulation Act during the year 1921. The employment of boys under 14 years of age or of women and girls in or about a mine is prohibited, and restrictions are placed upon the employment of youths. In 1921 the total number of boys between 14 and 16 years of age employed in coal and shale mines was 746, of whom 510 worked below ground, and 236 on the surface.

#### WAGES OF COAL-MINERS.

The rate paid to miners varies according to the conditions of the seams or places where the coal is mined. The average rates at 31st December, 1921, were as follows:—

	Northern District.	Southern District.	Western District.
Miners .. .. .	2/5½ to 6/11½ per ton ..	3/3½ per ton .. ..	3/6½ to 4/2½ per ton.
Deputies .. .. .	21/7 to 22/1 per day ..	£6 10/- per week ..	21/7 per day.
Overmen (underground) ..	.. ..	£6 15/- to £8 1/- p. wk. ..	.. ..
Deputy Overmen .. ..	.. ..	£6 12/6 per week ..	.. ..
Shot-firers .. .. .	20/7 to 21/1 per day ..	20/7 per day .. ..	21/7 per day.
Waste-examiners .. ..	20/7 .. 21/1 .. ..	.. ..	.. ..
Engineers and mechanics ..	2/2½ .. 2/6½ per hour ..	17/4½ to 22/2 per day ..	2/0½ to 2/6 per hour.
Engine-drivers—			
Loco. engines .. ..	16/- to 20/- per day ..	20/- and 22/- per day ..	.. ..
Winding .. .. .	20/- .. 22/- .. ..	.. ..	21/6 and 22/- per day.
Haulage .. .. .	.. ..	18/9 per day .. ..	.. ..
Other engines .. ..	17/7 to 20/- per day ..	.. ..	18/7 and 18/9 per day.
Stokers and firemen .. ..	16/6 .. 17/7 .. ..	16/9 to 17/9 per day ..	16/9 to 1/9 ..
Motor attendants or drivers ..	7/5 .. 17/1 .. ..	.. ..	.. ..
Shiftmen .. .. .	16/6 .. 21/1 .. ..	19/8 per day .. ..	16/6 to 18/2 per day.
Wheelers .. .. .	15/7 .. 17/9 .. ..	17/7 .. ..	18/2 per day.
Flatters .. .. .	16/6 per day .. ..	17/7 .. ..	.. ..
Water-bailers .. ..	16/6 .. ..	17/7 .. ..	9/9 to 14/3½ per day.
Set riders .. .. .	17/6 .. ..	.. ..	.. ..
Rolleyway men .. ..	16/11 to 18/9 per day ..	.. ..	.. ..
Roadlayers .. .. .	16/11 .. 18/9 .. ..	.. ..	.. ..
Waggon packers .. ..	16/6 per day .. ..	.. ..	.. ..
Banksmen .. .. .	18/2 .. ..	17/9½ per day .. ..	18/7 per day.
Shunters .. .. .	16/6 .. ..	.. ..	.. ..
Screenmen .. .. .	16/6 .. ..	16/6 per day .. ..	.. ..
Onsetters .. .. .	16/6 to 18/2 per day ..	18/1 .. ..	18/2 per day.
Platelayers .. .. .	.. ..	16/6 .. ..	.. ..
Harness-makers .. ..	2/2½ per hour .. ..	17/1 .. ..	.. ..
Stabblers .. .. .	2/0½ .. ..	16/6 .. ..	.. ..
Trappers .. .. .	.. ..	6/8½ .. ..	.. ..
Labourers .. .. .	16/6 to 17/7 per day ..	16/6 .. ..	2/0½ to 2/6 per hour.
Boys and Youths .. ..	6/2 .. 15/5 .. ..	7/5 to 11/2½ per day (average).	9/- .. 14/3½ per day

The following table shows the quantity and value of coal raised in New South Wales from the earliest record to the close of 1921, the total production being 267,473,919 tons, valued at £114,946,009. The figures are exclusive of coal used in the manufacture of coke, particulars as to which are quoted elsewhere in this Chapter :—

Period.	Coal Raised.	Value at Pit's Mouth.	Average per ton.
	tons.	£	s. d.
Prior to 1890	46,803,983	22,787,156	9 9
1890-4	17,830,177	6,811,568	7 8
1895-9	21,334,976	6,048,281	5 8
1900-4	29,792,589	10,369,050	7 0
1905-9	39,083,328	13,234,796	6 9
1910-4	47,555,714	17,344,973	7 4
1915-19	43,563,766	21,548,442	9 11
1920	10,715,999	7,723,355	14 5
1921	10,793,387	9,078,383	16 10
Total	267,473,919	114,946,009	8 7

The bulk of production is obtained from the northern coal-fields. The output of each district during 1921 was :—Northern, 7,493,002 tons, valued at £6,579,710; Southern, 2,062,958 tons, £1,702,282; Western, 1,237,427 tons, £796,396.

The following statement shows the quantity of New South Wales coal consumed in Australia and New Zealand, including bunker coal taken by interstate vessels, and the oversea exports, annually, since 1911 :—

Year.	Domestic Consumption	Sent to other Australian States and New Zealand. *	Total.	Exported to Oversea Countries excluding New Zealand. †	Total Production.
	tons.	tons.	tons.	tons.	tons.
1911	3,667,524	2,525,776	6,193,300	2,498,304	8,691,604
1912	3,832,697	3,096,179	6,928,876	2,956,939	9,885,815
1913	4,182,441	3,465,787	7,648,228	2,765,937	10,414,165
1914	4,522,589	3,221,783	7,744,372	2,646,250	10,390,622
1915	4,780,614	2,601,070	7,381,684	2,067,324	9,449,008
1916	4,693,063	2,203,659	6,896,722	1,230,439	8,127,161
1917	5,029,070	2,225,228	7,254,298	1,038,569	8,292,867
1918	5,641,500	2,697,033	8,338,533	724,643	9,063,176
1919	5,128,536	1,891,317	7,019,853	1,611,701	8,631,554
1920	5,729,208	2,270,556	7,999,764	2,716,235	10,715,999
1921	5,268,628	2,752,810	8,021,438	2,771,949	10,793,387

\* The figures from the year 1917 are for the Australian States only.  
the year 1917.

† Including New Zealand from

The output of coal in 1921, 10,793,387 tons, exceeded last years total, hitherto the highest, by 77,388 tons.



The variation in the proportion of the total production used for domestic consumption is shown in the following percentages :—

Year.	Proportion of Output.		
	Used for Domestic Consumption.	Sent to other Australian States and New Zealand.	Exported to other Countries.
	Per cent.	Per cent.	Per cent.
1912	38·8	31·3	29·9
1913	40·2	33·3	26·5
1914	43·5	24·9	31·6
1915	50·6	27·5	21·9
1916	57·7	27·1	15·2
1917	60·7	*26·8	†12·5
1918	62·2	*29·8	†8·0
1919	59·4	*21·9	†18·7
1920	53·5	*21·2	†25·3
1921	48·8	*25·5	†25·7

\* Australian States only. † Including New Zealand.

Calculated on the total value of the production during the decade, the average quantity of 697 tons extracted yearly by each person employed underground represents a value of £360. In 1921 the average value of production was £575 for each person employed below ground :—

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground.	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1911	17,375	12,679	8,691,604	686	3,167,165	7 3	250
1912	17,795	13,089	9,885,815	755	3,660,015	7 5	280
1913	18,843	14,164	10,414,165	735	3,770,375	7 3	266
1914	19,758	15,007	10,390,622	692	3,737,761	7 2	250
1915	17,959	13,476	9,449,008	701	3,424,630	7 3	254
1916	16,764	12,443	8,127,161	653	3,336,419	8 2	268
1917	17,197	12,701	8,292,867	653	4,422,740	10 8	348
1918	16,774	12,396	9,063,176	731	4,941,807	10 11	399
1919	18,041	13,576	8,631,554	636	5,422,846	12 7	399
1920	19,800	14,806	10,715,999	724	7,723,355	14 5	522
1921	21,265	15,777	10,793,387	684	9,078,388	16 10	575

#### *Coal-cutting by Machinery.*

Of the machines in use in 1921, 120 were classed as percussive, and 161 as chainbreast; 157 were driven by electricity, and 124 by compressed air.

The quantity of coal obtained during 1921 by machines driven by electricity was 1,666,709 tons, and that by machines driven by compressed air 661,970 tons, the total 2,328,679 tons representing 22 per cent. of the total output.

#### *State Coal-mines.*

The State Coal-mines Act, 1912, empowers the Government to purchase or resume coal-bearing lands or coal-mines and to open and work coal-mines

upon Crown land or private land containing coal reserved to the Crown. The coal obtained from a State mine is to be used only by the State Departments.

A State coal-mine was opened at Lithgow, in the Western district, in September, 1916; the area of the land containing coal reserved for the Crown amounts to about 40,200 acres, and the available supply of coal is estimated at 240,000,000 tons. The mine, which was closed down in July, 1917, was taken over by the Railway Commissioners in the early part of 1921, and work in connection with the development of the mine and the construction of the railway is now in progress.

### *Prices of Coal.*

The average price of coal per ton in the various districts for the last ten years is shown below; in the average for New South Wales allowance has been made for the quantity raised in each district.

District.	1912.	1913	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Northern ...	8 1	7 10	7 8	7 7	9 1	11 5	11 8	13 6	15 3	17 7
Southern ...	6 1	6 1	6 4	6 11	7 2	10 0	9 10	11 10	13 4	16 6
Western ...	5 0	5 2	5 6	5 6	5 7	8 0	8 8	9 4	11 8	12 10
New South Wales	7 5	7 3	7 2	7 3	8 2	10 8	10 11	12 7	14 5	16 10

### *Coke.*

Coke-making is carried on in each of the three coal-mining districts of the State, but until 1920 the bulk of the output came from the southern district, where it is manufactured from coal drawn from the mines in the locality of Wollongong. The production in the northern district has increased considerably, as a result of the establishment of the Broken Hill Proprietary Company's Steel Works at Newcastle, the coke for the furnaces being supplied by the Company's own plant.

All the coke produced is suitable for use in blast furnaces, but the products of the northern and southern districts are harder, better able to carry a load in the furnace, and contain less ash than the coke of the western district. The plants in the southern district, being closer to Sydney, have advantage in railway transit of a lower transport cost than the plants in the northern and western districts.

The quantities of coke manufactured in New South Wales during the last five years were as follows :—

Year.	Quantity.				Total Value at Ovens.	Average Value per ton.
	Northern District.	Southern District.	Western District.	Total.		
	tons.	tons.	tons.	tons.	£	s. d.
1917	111,803	297,904	45,880	455,587	541,093	23 9
1918	184,209	376,289	47,994	608,492	647,798	21 4
1919	168,885	236,546	19,342	424,773	550,127	25 11
1920	257,693	280,568	29,308	567,569	844,191	29 9
1921	277,475	289,670	24,952	592,097	1,029,694	34 9

The various districts contributed as follows to the total value of coke manufactured during the year 1921 :—Northern, £544,335; Southern, £447,931; Western, £37,428.

The average values per ton at the ovens were :—Northern, 39s. 2d.; Southern, 30s. 11d.; Western, 30s.

The following statement shows the number of coke ovens and the persons engaged in the manufacture of coke in each district during 1921 :—

District.	Coke Ovens.				Persons engaged in manufacture of coke.
	Working.	Not Working.	In course of Building.	Total.	
Northern ... ..	310	105	129	544	301
Southern ... ..	460	159	5	624	312
Western ... ..	81	52	...	133	34
Total ... ..	851	316	134	1,301	647

### OIL SHALE.

The production of oil shale, from the opening of the mines in 1865 to the end of 1921, is shown in the following table :—

Period.	Quantity.	Total Value at Mines.	Average Price per ton at Mines.	Period	Quantity.	Total Value at Mines.	Average Price per ton at Mines.
	tons.	£	£ s. d.		tons.	£	£ s. d.
1865-84	370,217	828,194	2 4 9	1910-14	296,449	149,758	0 9 6
1885-89	186,465	406,255	2 3 7	1915-19	122,408	144,871	1 3 8
1890-94	247,387	451,314	1 16 6	1920	21,004	46,082	2 3 10
1895-99	191,763	222,690	1 3 3	1921	32,489	77,380	2 7 8
1900-04	213,163	177,245	0 16 8				
1905-09	213,024	131,456	0 12 4	Total ...	1,894,369	2,626,276	1 7 9

In 1921 the output was obtained from the mines in the western district.

The Shale Oils Bounties Act, passed by the Commonwealth Government during 1910, to make provision for the payment of bounties on the manufacture of kerosene and paraffin wax from Australian shale, expired on 30th June, 1913, and no further bounty was payable until 1917, when a bounty on crude shale oil produced in Australia from mined kerosene shale was provided for a period of four years dating from 1st September, 1917. The maximum amount payable in any one year is £67,500, the rate per gallon to each producer being as follows :—3,500,000 gallons and under, 2½d.; 3,500,000 to 5,000,000, 2d.; 5,000,000 to 8,000,000, 1½d.; each additional gallon, 1½d. In the year 1919-20 the bounty paid amounted to £16,202, and in 1920-21 to £24,406.

Large quantities of oil manufactured at Hartley Vale have been supplied to the Australian warships.

### DIAMONDS.

Diamonds and other gem-stones in New South Wales were noted as early as 1851 by both Hargraves and Stutchbury, and have since been found to be widely distributed, but no extensive fields have been discovered. The finest of the New South Wales diamonds are harder and whiter than the South Africa diamonds, and are classified as on a par with the best Brazilian gems.

The following table shows the output as compiled from the available information, but it is probable that the actual output of diamonds in New South Wales is much greater. The majority of the diamonds have been obtained from the mines in the Bingara and Copeton districts; in recent years the whole output has been from the latter district :—

Period.	Carats.	Value.	Period.	Carats.	Value.
		£			£
1867-1885	2,856	2,952	1906-1910	16,651	12,874
1886-1890	8,120	6,390	1911-1915	16,003	13,353
1891-1895	19,743	18,245	1916-1920	11,973	12,573
1896-1900	69,384	27,948	1921	1,563	1,915
1901-1905	54,206	46,434			

#### OPAL.

Common opals occur in many parts of New South Wales, and particularly in the locality of Orange. The precious or noble opal has been found in two geological formations in New South Wales, viz., in vesicular basalt and in sedimentary rocks of the Upper Cretaceous age. Only from the latter formation have gems in quantity and value been obtained hitherto, the finest opal known being located in the Upper Cretaceous formation at White Cliffs, near Wilcannia. Black opal, remarkable for colour, fire, and brilliancy, is obtained at Lightning Ridge, near the Queensland border.

The following table shows the estimated value of precious opal won in New South Wales to the end of 1921 :—

Period.	Value.	Period.	Value.
	£		£
1890	15,600	1911-1915	154,738
1891-1895	25,999	1916-1920	105,547
1896-1900	415,000	1921	13,020
1901-1905	476,000		
1906-1910	305,300	Total	1,511,204

#### ALUNITE.

Alunite, or alumstone, occurs at Bullahdelah, about 35 miles from Port Stephens, in a narrow mountain range which for more than a mile of its length is composed almost entirely of alunite, of greater or less purity.

Four varieties of alunite are recognised at the mines, but working is confined mainly to the light-pink ore, the yield averaging about 80 per cent. of alum.

During 1910 and 1911 prospecting by means of diamond-drilling was carried on at Bullahdelah, with a view to locating further bodies of alunite of payable grade, so as to maintain the export trade; as a result there was a large increase in the quantity exported. In 1921 the production was 520

tons, valued at £2,080 and since the year 1890 the quantity and value of alunite, the produce of New South Wales, exported have been 54,887 tons, value £195,587. Particulars are not available as to the amount of alum of local production used within the State.

#### OTHER MINERALS.

*Marble*.—Beds of marble of great variety of colouring, and with highly ornamental markings, are located in many districts of New South Wales. Much of the marble is eminently suitable for decorative work, and in recent years has won the favour of builders. During 1921 marble valued at £2,100 was obtained.

*Limestone*.—The quantity of limestone raised for flux in 1921 was 111,558 tons, valued at £41,834.

*Fireclays*.—Fireclays of good quality are found in the Wianamatta shales and in the permo-carboniferous measures, and excellent clays for brick-making purposes may be obtained in all parts of the State.

*Kaolin*.—Kaolin, or China clay, derived from the decomposition of the felspars in granite, is found in many granitic districts.

*Magnesite*.—Magnesite is found at Fifield, and a large quantity is procurable easily. The output during 1921 was 12,268 tons, valued at £14,407.

*Diatomaceous earth* occurs in large deposits in several localities.

*Other Mineral Deposits*.—Other mineral deposits known to exist but not worked extensively include asbestos, barytes, fluorspar, Fuller's earth, ochre, graphite, slate, and mica. The production of the minerals as recorded in 1921 was as follows:—

Mineral.	Quantity.	Value.	Mineral.	Quantity.	Value.
	tons.	£		tons.	£
Arsenic ... ..	397	17,865	Kaolin ... ..	...	...
Asbestos ... ..	945	23,736	Limestone for Flux ...	111,558	41,834
Barytes ... ..	200	600	Magnesite ... ..	12,268	14,407
Chrome ... ..	62	124	Manganese ... ..	3,515	10,545
Clays ... ..	49,667	37,250	Marble ... ..	470	2,100
Diatomaceous Earth ...	206	584	Phosphate Rock ...	200	50
Dolomite ... ..	8,925	4,463	Pigments ... ..	443	544
Fluorspar... ..	...	...	Silica ... ..	18,909	37,818
Fuller's Earth ... ..	...	...	Slates ... ..	...	...
Granite ... ..	...	2,514	Steatite .. ...	...	...
Graphite ... ..	...	...	Talc ... ..	60	180

#### HEALTH OF MINERS IN METALLIFEROUS MINES.

Under instructions from the Minister for Labour and Industry, the Board of Trade made inquiry during 1918 into the prevalence of phthisis among miners, and upon the Board's recommendation a Technical Commission was appointed to inquire into the dust conditions in the metalliferous mines of the State, and into the health of employees in such mines.

During the four months in which it carried out investigations at Broken Hill, the Commission made complete examinations of 3,967 mine workers, and the results showed that 193 persons exhibited signs of pneumoconiosis. Of these 193 persons, 90 were in the first stage of pneumoconiosis, 44 in the second stage, and in 59 cases the disease was complicated with tuberculosis. In addition, 39 persons were found to be suffering from pulmonary tuberculosis alone, and 26 other persons exhibited symptoms of pulmonary tuberculosis.

Of the 3,967 persons, 1,697 were practical miners, and 2,270 were other mine workers. Of the former, 10·6 per cent., and of the latter 0·6 per cent. exhibited pneumoconiosis. The proportion of affected persons was greatest amongst those who had worked longest in the mines. This is apparent from the following figures :—

Period of Work.	Practical Miners Examined.	Affected with Pneumoconiosis.	
		Number.	Per Cent.
Under 10 years ... ..	741	16	2·2
10 to 20 „ ... ..	544	65	11·9
20 to 30 „ ... ..	289	64	22·0
Over 30 „ ... ..	123	35	28·5
Total ... ..	1,697	180	10·6

As the result of their investigation, the Commission concluded that it is the dust that accompanies mining operations, which passes into the lungs and occasions pneumoconiosis, on which tuberculosis may supervene later. The Commission were of the opinion that no person suffering from tuberculosis should be permitted to work in the mines, either on the surface or below ground, and that no person suffering from pneumoconiosis should be allowed to continue working along the line of lode, either on the surface or under ground; also that compensation should be given to persons affected with progressive tuberculosis.

The recommendation of the Commission that compensation should be paid in the cases of disablement or death of workmen from pneumoconiosis or tuberculosis has been given effect to in the Workmen's Compensation (Broken Hill) Act, 1920, which will remain in force until 30th September, 1928.

#### MINING ACCIDENTS.

The number of fatalities during the last five years in the more important branches of mining, and the rates per 1,000 employees are shown below, also the number of persons seriously injured :—

Year.	Metalliferous Mines.						Coal and Shale Mines.	Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total Metalliferous		

#### *Number of Fatalities.*

1916	1	14	5	1	...	21	13	34
1917	...	7	4	2	...	13	24	37
1918	1	9	1	...	1	12	11	23
1919	...	6	...	...	...	6	17	23
1920	...	...	...	2	2	4	20	24
1921	2	1	..	1	...	4	19	23

MINING ACCIDENTS—*continued.*

Year.	Metalliferous Mines.					Total Metalliferous	Coal and Shale Mines.	Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.			
<i>Per 1,000 Employees.</i>								
1916	·43	2·17	3·01	·52	...	1·46	·77	1·09
1917	...	·92	1·93	1·12	...	·84	1·38	1·13
1918	·39	1·19	·65	...	·37	·76	·65	·68
1919	...	·92	...	...	...	·42	·94	·71
1920	...	...	...	1·10	·64	·44	1·00	·82
1921	1·32	·32	...	·76	...	·47	·89	·77
<i>Number of Persons Injured, but not fatally.</i>								
1916	1	24	1	2	3	31	55	86
1917	...	31	3	1	2	37	55	92
1918	...	41	9	...	2	52	132	184
1919	2	14	...	1	1	18	100	118
1920	1	5	...	2	4	12	113	125
1921	2	19	...	1	...	22	113	135

Of the 4 persons fatally injured during 1921 while employed in metalliferous mining none was employed underground, while of the 22 injured 4 only were so employed. The proportion of accidents below the surface was greater in the case of coal-mines; 16 of the 19 fatalities occurred underground, while of the 113 persons injured only 17 were employed on the surface. One accident occurred in coal-mines from the explosion of firedamp and coal dust. The number of persons injured, but not fatally, per 1,000 employed in mining generally, was 4·54, in 1921.

The experience of coal-mining in this State with respect to accidents bears very favourable comparison with that of other countries.

A recent estimate shows that 48·5 per cent. of the total output of coal in New South Wales is obtained from collieries where miners use safety-lamps; and as the workings get deeper this proportion is likely to increase since with greater depth there is more likelihood of fire-damp.

Considerable improvements have been made in portable electric safety-lamps during late years, and their use for underground purposes has been much increased.

Ambulance classes are trained, and corps exist, in New South Wales for the purpose of promoting among miners a knowledge of first-aid principles.

Eight classes were formed during 1921, the total number registered since 1897 being 167.

Interesting information regarding the sickness experience of Friendly Societies in mining districts is given in the section of this book dealing with Social Condition.

## SOCIAL CONDITION.

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THE social condition of the people of New South Wales, judged from the standpoint of health and living conditions, compares favourably with that of any other part of the world. The climate is salubrious with plenty of sunshine, practical measures to promote the wellbeing of the people, through the prevention or relief of sickness and destitution, are directed by the State, free education is provided, wages are fixed with the view of securing to all workers a reasonable standard of comfort, and pensions are paid to the aged and infirm.

### PUBLIC HEALTH SERVICES.

Executive powers in relation to Public Health in New South Wales are vested primarily in local authorities, who carry out the functions under supervision of the Board of Health as the central controlling authority. Within municipalities the local council is the stated authority, and outside municipal areas the duties are performed either by the shire councils or by persons or bodies specially appointed for the purpose.

The most important legislative enactments are the Public Health Act dealing with public health and sanitation, and Acts relating to dairies supervision, noxious trades, diseased animals and meat, and pure food; also provisions of the Local Government Act specify the powers and duties of the municipal and shire councils for ensuring the health of the incorporated areas. Control of sanitation by means of by-laws and regulations is the method adopted generally, as being readily adaptable to the varying conditions of a widely-scattered community.

The executive personnel of the public health services includes medical officers and sanitary inspectors. The former are permanent salaried officers, appointed by the Government, who devote the whole of their time to matters relating to public health in groups of populous districts. It was intended that all the more densely-populated districts should be placed under the supervision of medical officers, but up to the present they have been appointed in three areas only, viz., the Metropolitan district; the Hunter River districts, which include Newcastle; and the Broken Hill district. Outside these areas expert advice may be obtained from medical officers attached to the central staff of the Public Health Department, who visit localities when required. In every town a local medical practitioner is appointed as a Government medical officer for the purpose of attending to Government medical work, e.g., inquests, sickness in gaols, etc.; they have no regular duties or legal powers, and are paid in fees for services rendered.

The Department of Public Health, under the control of a Minister of the Crown, includes two branches, one directed by the Board of Health and the other by the Director-General of Public Health; their functions, though distinct, are closely co-ordinated, as they are served by the same staff, and the Director-General, who is a permanent salaried officer of the Government, is *ex officio* President of the Board. The Public Health Act provides



that the Board shall consist of not less than seven and not more than ten members, including four legally qualified medical practitioners, all being nominated by the Government. The Board is the executive and administrative authority in connection with the health laws; it acts in an advisory capacity towards the Minister for Public Health and the Government, and exercises supervision over the manner in which local authorities carry on their public health functions. The Public Health Act provides that if a local authority neglects the performance of these duties they may be undertaken by the Board. The Department of Public Health controls four hospitals and five asylums for the infirm and a microbiological laboratory, which is engaged in important investigations relating to public health.

Other Government Departments supervise measures in connection with child welfare, assistance to public hospitals, and charitable relief; while a special department has been organised for the care of State children.

*Government Expenditure on Hospitals and Charitable Relief.*

The expenditure by the State on hospitals and charitable relief in 1920-21 amounted to £1,920,472; of this amount, £117,185 was expended from the Public Works Account on buildings, etc., and £1,803,287 was from Consolidated Revenue.

The following statement shows the growth of expenditure in the five years ended 30th June, 1921:—

Payments from—	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Consolidated Revenue ... ..	946,418	983,483	1,283,114	1,726,475	1,803,287
Public Works Account ... ..	78,830	49,683	77,132	103,768	117,185
Total ... ..	£ 1,025,248	1,033,166	1,360,246	1,830,243	1,920,472

The expenditure from Consolidated Revenue on hospitals and charities includes the cost of maintenance of the State institutions, also subsidies granted to other institutions, on condition that an equal amount be raised by private contributions, and that the Government through approved officers have the right of recommending the admission of patients.

The Government issues orders authorising the holders to secure relief from the institutions. During 1920 orders numbering 11,842 were granted: 6,535 were to the Government asylums, 3,658 were to the Coast Hospital, and 657 were for outdoor treatment at hospitals; the balance was distributed among other institutions. The total applications numbered 11,911, as compared with 8,920 in 1919.

The expenditure on hospitals and charities during the last three years was greatly augmented by reason of expenses in connection with the influenza epidemic of 1919; large sums were expended in providing treatment for persons affected with the disease and in compensating for the closure of schools and businesses during the period of the epidemic.

Taking into account the subvention paid by the State Government to Friendly Societies, as well as the old-age and invalidity pensions and the maternity allowances provided by the Commonwealth Government, the expenditure from Consolidated Revenue on eleemosynary objects in New

South Wales in 1920-21 amounted to £4,062,825, or £1 18s. 11d. per head. A classification of the items of expenditure during the last two years is shown below in comparison with the expenditure ten years earlier. Expenditure in connection with the medical inspection of school children is not included, nor costs of administration, except in regard to the State Children Relief Department, the mental hospitals, and the protection of aborigines.

Head of Expenditure.	1909-10.	1919-20.	1920-21.
	£	£	£
General Hospitals and Charitable Institutions	112,807	327,353	402,243
Mental Hospitals ... ..	184,373	473,902	564,388
Children's Relief ... ..	101,083	264,232	372,103
Government Asylums for the Infirm ...	81,655	146,633	171,602
Destitute and Deserted, Sick and other ...	29,526	140,922	227,132
Aborigines' Protection ... ..	15,256	21,072	22,485
Charitable Societies ... ..	5,788	4,128	5,652
Subvention to Friendly Societies ... ..	14	33,000	29,594
Expenses of Influenza Epidemic ... ..	...	328,944	20,773
Miscellaneous ... ..	875	19,239	16,909
State ... ..	531,377	1,759,475	1,832,881
Old-age and Invalidity Pensions ... ..	695,632*	1,657,603	1,951,744
Maternity Allowances... ..	...	244,545	278,200
Commonwealth ... ..	695,632*	1,902,148	2,229,944
Total ... ..	£ 1,227,009	3,661,623	4,062,825
Per head of Population—	£ s. d.	£ s. d.	£ s. d.
State ... ..	0 8 1	0 17 3	0 17 7
Commonwealth ... ..	0 7 11	0 18 8	1 1 4
Total ... ..	£ 0 16 0	1 15 11	1 18 11

\* Includes £131,765 paid by State.

The expenditure in 1920-21 was considerably more than three times the amount spent in 1909-10; the cost to the State per head of population increased from 8s. 1d. to 17s. 7d., notwithstanding the transfer to the Commonwealth of the charges in respect of invalidity pensions.

#### TREATMENT OF SICKNESS.

Institutions for the treatment of sickness and disease include private hospitals, which are owned entirely by private persons and conducted as business enterprises; public hospitals maintained by the State or conducted by charitable organisations; and mental hospitals conducted by the State or under license, for the treatment of persons with mental or nervous ailments.

The State exercises a measure of supervision over the practice of professional persons engaged in the treatment of sickness and disease; medical practitioners, dentists, and pharmacists are required to register with a board established for each profession under statutory authority. Members of the nursing profession are certificated by the Australasian Trained Nurses' Association, though the organisation has no legal status as to supervision. At the end of the year 1921 there were on the registers 2,361 medical practitioners, 1,761 dentists, 1,321 pharmacists, and 382 other persons licensed to sell poisons, and 3,617 nurses, viz., 2,266 general nurses, 1,314 obstetric, and 37 mental.

The State subsidises medical practitioners in outlying bush settlements, with a view of encouraging them to practise in these sparsely-populated localities; usually the Government arranges to contribute an amount necessary to bring their earnings to a certain sum.

#### *Private Hospitals.*

A private hospital may not be conducted except under license in accordance with the Private Hospitals Act of 1908; the licenses are issued annually by the Minister for Public Health on the recommendation of the Board of Health, and it is prescribed that every private hospital must be under the direct control of a person approved by the Board. Licensees are required to comply with regulations as to structure, management, and inspection.

In 1921 the private hospitals numbered 536; viz., 188 in the metropolitan district and 348 in the country. Particulars as to the classification of the hospitals and the accommodation are shown in the following statement:—

District.	Classification.				Accommodation.			
	Medical, Surgical, and Lying-in.	Medical and Surgical.	Lying-in.	Total.	1 to 3 Beds.	4 to 10 Beds.	11 to 20 Beds.	Over 20 Beds.
Sydney ... ..	No. 52	No. 15	No. 121	No. 188	No. 64	No. 68	No. 29	No. 27
Country ... ..	127	11	210	348	141	164	37	6
Total ... ..	179	26	331	536	205	232	66	33

#### *Public Hospitals.*

Public hospitals embrace all institutions for the care of the sick, except those owned and maintained entirely by private persons. There are four State institutions, viz., the Coast Hospital and the Lady Edeline Hospital for Babies in the Metropolitan district; and the David Berry Hospital and the Waterfall Hospital for Consumptives in the country districts. The Coast Hospital is the largest general hospital in Australia. It has 694 beds and a staff of nine resident medical officers. Besides general medical and surgical wards, this institution is the infectious disease hospital for Sydney, and it includes in its wide area wards for venereal diseases and leprosy. In addition there are hospitals attached to State asylums, of which particulars are not included in the following tables, but are shown separately on a later page. The other public hospitals, with five exceptions, receive financial aid from the public revenue; some are conducted by religious organisations.

The Public Hospitals Act of 1898, as amended in 1900, defines the procedure in the election of officers, and in matters relating to the property of the public hospitals to which the provisions of these Acts have been extended. Every public hospital under its jurisdiction is managed by a committee elected annually by the persons who contribute to its funds.

There were in New South Wales at the end of 1920, 153 general public hospitals for the treatment of the sick, of which 26 were in the Metropolitan area, and 127 in country districts. The accommodation comprised 7,846 beds (including 844 in the open air), viz., in the Metropolitan hospi-

tals, 3,717, or an average of 143 per hospital; and in country districts, 4,169, or an average of 33 per hospital. The cubic capacity of Metropolitan hospitals was an average of 1,132 cubic feet per bed; in the country hospitals the average was 1,188 cubic feet; the average for New South Wales being 1,162 cubic feet per bed. The average daily number of patients was 5,466; 2,809 in all the Metropolitan hospitals, and 2,657 in the country.

The following statement shows the extent to which the general hospital services have increased since 1901:—

Particulars.	1901.		1911.		1920.	
	Metro-politan.	Country.	Metro-politan.	Country.	Metro-politan.	Country.
Hospitals ... ..	15	103	21	120	26	127
Beds, including those in open air	1,453	1,938	2,113	2,976	3,298	3,698
Indoor patients ... ..	16,919	16,093	29,610	26,954	48,643	43,125
Outdoor patients ... ..	72,645	7,614	104,466	11,880	217,960	26,565
Average daily number of patients	2,045		3,302		5,466	
Indoor patients per 1,000 of mean population ... ..	24·1		34·0		44·5	

The number of indoor patients is exclusive of those treated in Government asylum hospitals, and the outdoor patients are exclusive of 4,843 and 6,193, patients treated at the Dental Hospital during the years 1911 and 1920 respectively.

The following statement shows the medical and nursing staffs attached to public hospitals during 1920:—

Hospitals.	Medical Staff.		Nursing Staff.			
	Honorary.	Salaried.	Qualified Nurses.	Nurses Training.	Wardsmen & Wardsmen.	Total.
Metropolitan ... ..	434	112	642	583	92	1,317
Country ... ..	272	130	660	351	75	1,086
Total ... ..	706	242	1,302	934	167	2,403

During the year 91,768 persons were under treatment as indoor patients, 48,643 in Metropolitan, and 43,125 in country hospitals, and the number remaining in hospitals at the close of the year was 4,987 (2,739 males and 2,248 females). These figures include transfers, and represent the aggregate of the number of cases treated at each hospital; cases admitted more than once during the year are counted upon each occasion.

The following statement shows the number of indoor patients treated, and the discharges and deaths during the past five years:—

Year.	Indoor Patients under Treatment.	Discharges.	Deaths.	Patients at the end of Year.
1916	75,856	66,642	5,027	4,187
1917	76,660	67,890	4,627	4,143
1918	77,253	68,215	4,818	4,220
1919	86,884	75,603	6,624	4,657
1920	91,768	81,071	5,710	4,987

The increase in the number of patients treated has been steady, and has been more rapid than the growth of population, the proportion of the population treated in hospitals having risen gradually from 28 per 1,000 in 1906 to 44 per 1,000 in 1920. The increase does not indicate a larger degree of sickness in the community, but is due principally to a wider knowledge concerning the benefits to be derived from expert treatment which is provided in the hospitals and to the largely increased hospital accommodation; also the increased cost of home-nursing and the scarcity of domestic labour probably cause more patients to go to hospitals for treatment.

During 1920 244,525 persons were treated as outdoor patients of the general hospitals, viz., 217,960 at Metropolitan hospitals, excluding 6,193 at the Dental Hospital, and 26,565 at country hospitals.

The following statement shows the revenue and expenditure of the public hospitals in the year 1920; the expenditure in connection with the institutions controlled entirely by the Government has been included:—

Items.	Metropolitan.	Country.	New South Wales.
Receipts—	£	£	£
State Aid ... ..	226,332	232,486	458,818
Subscriptions and Donations ... ..	202,120	153,750	355,870
Contributions by Patients ... ..	71,642	60,588	132,230
Miscellaneous ... ..	46,488	15,566	62,054
Total Receipts ...	£ 546,532	462,390	1,008,972
Expenditure—			
Buildings and Repairs ... ..	76,347	82,883	159,230
Salaries and Wages ... ..	197,199	151,527	348,726
Provisions, Stores, etc. ....	220,406	196,673	417,079
Miscellaneous ... ..	43,905	24,660	68,565
Total Expenditure ...	£ 537,857	455,743	993,600

According to the hospital accounts the total amount of State aid received by the hospitals in 1920 was £458,818, of which Metropolitan hospitals received £226,332 and country hospitals £232,486.

These amounts do not include the expenditure in connection with the treatment of sick persons in the State asylums for the infirm, as it is not practicable to separate the expenditure incurred in the treatment of sickness from the expenses in respect of the ordinary functions of the asylums.

The revenue and expenditure of public hospitals at intervals since 1901 are shown below:—

Year.	Revenue.					Expenditure.				
	State aid.	Subscriptions and Donations.	Contributions by Patients.	Other.	Total.	Buildings and Repairs.	Salaries and Wages, Provisions, Stores, etc.	Other.	Total.	
	£	£	£	£	£	£	£	£	£	
1901	91,363	50,939	23,698	16,727	182,727	17,354	141,399	17,365	176,118	
1906	109,296	85,421	31,525	16,617	242,859	26,815	179,431	18,666	224,912	
1911	159,147	131,244	50,099	22,867	363,357	50,902	263,037	34,877	348,816	
1916	285,325	163,018	85,551	24,981	558,935	80,182	433,339	37,546	551,067	
1917	296,561	174,805	91,336	27,933	590,635	85,997	473,148	43,496	602,641	
1918	318,291	243,892	97,481	52,528	712,192	97,930	534,407	54,324	686,661	
1919	386,316	243,234	95,631	50,874	776,105	132,589	619,536	65,470	817,595	
1920	458,818	355,870	132,230	62,054	1,008,972	159,230	765,805	68,565	993,600	

Of the total revenue, State aid represents about 45 per cent., contributions by patients 13 per cent., and subscriptions and donations 35 per cent. The expenditure per head of population increased from 2s. 7d. in 1901 to 9s. 7d. in 1920.

The balances of the funds of the hospitals as at the beginning and end of the year 1920 are shown in the following statement:—

Hospitals.	Current Account.		Invested Funds.	
	At 1st Jan., 1920.	At 31st Dec., 1920.	At 1st Jan., 1920.	At 31st Dec., 1920.
	£	£	£	£
Metropolis ...	(-) 140,250	(-) 173,426	145,609	187,510
Country ...	27,535	26,031	102,030	110,181
Total ...	(-) 112,715	(-) 147,395	247,639	297,691

(—) Indicates debit balance.

During the year 1920 the debit balance of the current accounts increased by £34,680, and the invested funds increased by £50,052. Under the existing method of financing hospitals by unorganised charity and supplementary grants from the public revenue there is increasing difficulty in meeting obligations.

As it is not possible to separate the expenditure on account of indoor and outdoor patients respectively, the average cost per occupied bed can be ascertained only for those hospitals where no outdoor relief is given.

Two State Convalescent Hospitals have been established—Denistone House, at Eastwood, for men; and the Strickland Convalescent Home, for women, Carrara, Rose Bay. These institutions receive persons who are convalescing from serious illness, and thereby accommodation is made available for urgent cases at the Metropolitan public hospitals. During 1920 the number of persons treated was 621 men and 556 women; 20 men and 33 women remained in the institutions at the end of the year.

At the Carrington Centennial Convalescent Hospital, Camden, patients from the Metropolitan district are accommodated for rest and change in the bracing climate of the southern highlands; the hospital is subsidised by the Government. The Thomas Walker Convalescent Hospital, Parramatta River, is privately endowed.

#### TREATMENT OF COMMUNICABLE DISEASES.

Measures for the treatment and prevention of infectious diseases are taken under the authority of the Public Health Act. Cases of such diseases as leprosy, bubonic plague, smallpox, scarlet fever, typhoid fever, diphtheria, infantile paralysis, cerebro-spinal meningitis, must be notified to the Board of Health; no case of typhus, yellow fever, or cholera has occurred in New South Wales, and cases of bubonic plague are rare. Cases of pulmonary tuberculosis must be notified in certain areas, viz., the Metropolitan and Hunter River districts, in the Katoomba Municipality, and in the Blue Mountains shire.

Where necessary, special provision is made for the isolation of infectious cases. In the Metropolis the majority are treated at the Quarantine Station, or at the Coast Hospital; country cases are accommodated in special wards of the local hospitals.

The cases of infectious diseases notified during 1920 were as follow:—

Disease.	Sanitary District.		Other Districts.	Total.
	Metro-politan.	Hunter River.		
Typhoid Fever ... ..	369	91	555	1,015
Scarlet Fever... ..	466	28	442	936
Diphtheria ... ..	1,789	467	2,787	5,043
Infantile Paralysis ... ..	37	...	8	45
Cerebro-spinal Meningitis ... ..	16	8	10	34
Tuberculosis ... ..	1,294	100	115	1,509
Leprosy ... ..	4	...	...	4

The following table shows the notifications of the various diseases for five years:—

Disease.	1916.	1917.	1918.	1919.	1920.
Smallpox ... ..	107	119	...	...	...
Typhoid Fever ... ..	1,742	1,091	810	857	1,015
Scarlet Fever ... ..	5,759	2,255	1,308	959	936
Diphtheria... ..	6,588	5,805	5,151	2,826	5,043
Infantile Paralysis ... ..	311	16	50	8	45
Acute Malarial Fever ... ..	61	17	11	35	...
Cerebro-Spinal Meningitis ... ..	309	197	120	28	34
Tuberculosis ... ..	1,499	1,319	1,308	1,102	1,509
Leprosy... ..	...	...	..	4	4

Malarial fever ceased to be notifiable in November, 1919.

### *Leprosy.*

Persons suffering from leprosy are segregated in the Leper Lazaret, which was opened for the admission of patients in 1883, though statutory provision for the compulsory notification of the disease and detention of lepers was not made until 1890. During 1920 four persons were admitted, 1 died, and 3 were discharged, leaving 24—20 males and 4 females—in the lazaret at 31st December, 1920. The birthplaces of the inmates of European descent were New South Wales, 7; Victoria, 1; England, 3; Ireland, 1; Malta, 1; Greece, 1. There were 10 coloured inmates—4 were born in China, 4 in the Pacific Islands, 1 in Java, and one is an Australian aboriginal. The cost of management was £3,938, or an average of £179 8s. per inmate.

### *Tuberculosis.*

A remarkable reduction in the mortality from tuberculosis has been effected since the enactment of the Dairies Supervision Act of 1886, the Pure Food Act of 1908, and other legislation for the protection of the food supply from insanitary conditions, but the fact, as shown in the chapter Vital Statistics, that tuberculosis still causes 6·3 per cent. of the deaths in New South Wales, demonstrates the necessity for further drastic measures to prevent the spread of the disease.

In July, 1912, an Advisory Board was appointed to assist the Government in matters relating to the treatment of tuberculous diseases. This Board is composed of medical practitioners representing the University, the hospitals, the Government Medical Service, the general practitioners, and the various branches of medical science, medicine, surgery, pathology, State medicine, and diseases of women and children, also a veterinary scientist.

Pulmonary tuberculosis was proclaimed as notifiable in the Metropolitan and Newcastle districts in 1915 and in the Blue Mountains tourist district in 1916. The Board of Health may prohibit affected persons from working in connection with preparation or packing of food.

Cases of tuberculosis may receive treatment of a temporary character at the general hospitals, and there are special institutions, such as the State Hospital at Waterfall, the Queen Victoria Homes for Consumptives at Wentworth Falls and Thirlmere, and the R. T. Hall Sanatorium at Hazelbrook, as well as several private hospitals; tuberculous cases are received also at the Sacred Heart Hospice for the Dying, Sydney. At the hospitals attached to the State asylums at Rookwood and Newington, accommodation is reserved for a limited number of tuberculosis patients, and arrangements have been made with the Government of South Australia to provide sanatorium treatment in that State for patients from Broken Hill. Five sanatoria have been established for the treatment of returned soldiers affected with tuberculosis.

The Waterfall Hospital was established in 1909 for the treatment of persons suffering from pulmonary tuberculosis. There are 408 beds, of which 92 are in the open air; 583 males and 253 females were accorded hospital treatment during 1920. The expenditure during the year was £30,119; the average cost of treatment, excluding buildings, repairs, &c., was £80 15s. per occupied bed.

The National Association for the Prevention and Cure of Consumption opened the first Anti-tuberculosis Dispensary in Sydney in 1912. The dispensary system is being extended with the co-operation and financial assistance of the Government; throat and chest dispensaries have been established in connection with three Metropolitan hospitals, and at Newcastle. Medical advice is given to patients, and nurses are employed to visit their homes and instruct the inmates in precautionary measures to prevent the spread of the disease.

The number of patients admitted to the Anti-Tuberculosis Dispensary for the year 1921 was 394, and the number of treatments was 5,893. Since September, 1912, the attendances have numbered 369,227, and 3,241 visits have been paid to patients.

#### *Venereal Diseases.*

The treatment of venereal diseases is regulated under the Venereal Diseases Act, 1918, which prescribes that all persons suffering from such diseases must place themselves under treatment by a qualified medical practitioner.

Clinics for the treatment of venereal diseases have been established at several of the Metropolitan public hospitals; and all public hospitals are required to provide free treatment; drugs and instruments being supplied by the Government. Special wards for these cases have been opened at the Newington and Liverpool State Hospitals. Prisoners suffering from venereal diseases are detained for treatment in lock hospitals under the Prisoners Detention Act. Particulars are given in the chapter relating to Police and Prison services.

#### MENTAL HOSPITALS.

The hospitals for the treatment of mental patients are under the control of the Inspector-General for the Insane, who is empowered to inspect hospitals, reception-houses, wards, and private institutions in which mental patients are treated. Persons with mental disease may be



admitted to an institution if certified of unsound mind by two qualified medical practitioners, either at the request of relatives or upon the order of two Justices of the Peace.

The business affairs of mental patients are managed by the Master in Lunacy, who in December, 1921, controlled trust funds amounting to £415,278.

Private institutions must obtain a license before receiving mental patients; licenses may be granted also for the reception of a single patient, but unauthorised persons are not permitted to take charge for profit of a person of unsound mind.

The institutions for the treatment of persons certified as of unsound mind consist of nine Government hospitals, in addition to a hospital for criminal insane at Parramatta, and three private licensed institutions at Tempe, Ryde, and Turrumurra; for patients from the Broken Hill District of New South Wales, accommodation is provided in a hospital in South Australia.

The medical staff of the hospitals and licensed houses numbered 23, the nursing staff and attendants numbered 664 men and 549 women, and the average daily number of patients resident, excluding patients on leave, was 7,297, comprising 4,248 males and 3,049 females.

At the 30th June, 1921, there were in the New South Wales hospitals 7,432 patients—4,298 males and 3,134 females; in the South Australian hospitals the patients from New South Wales numbered 27 men and 26 women; in addition there were 185 men and 272 women on leave from various institutions, making a total number of 7,942 under official cognisance—4,510 males and 3,432 females.

In the following table is stated, at intervals since 1881, the number of mental patients under official notice at the close of each year up to 1919, and at 30th June, 1921, with the proportion per 1,000 of the population:—

Year.	Number of Mental Patients.			Proportion per 1,000 of Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1881	1,354	726	2,080	3·16	2·06	2·66
1891	1,912	1,222	3,134	3·04	2·29	2·70
1901	2,684	1,804	4,488	3·72	2·75	3·26
1911	3,810	2,573	6,383	4·30	3·19	3·77
1916	4,264	3,020	7,284	4·43	3·25	3·85
1917	4,339	3,048	7,387	4·55	3·20	3·88
1918	4,416	3,212	7,628	4·54	3·31	3·93
1919	4,359	3,236	7,595	4·29	3·28	3·80
1921	4,510	3,432	7,942	4·23	3·35	3·80

From these figures it appears that generally the proportion of patients treated in the mental hospitals is increasing. The slight decrease shown by the figures of the last two years must not be taken as an indication that the incidence of insanity in the community is declining, as the admissions in those years were the highest on record. To ascertain the general insanity rate it would be necessary to consider the extent to which patients are treated in private houses, and the proportion of persons whose mental condition, while not calling for certification, might be relieved by treatment.

The influx of insane persons is restricted by legislation, which renders the owner, charterer, agent, or master of a vessel liable for the maintenance of any insane person landed in the State. In 1920-21 17 insane patients were received from places beyond the State, 4 being discharged after a few days' treatment at the Reception House, and 13 admitted to mental hospitals.

The numbers of admissions and re-admissions to mental hospitals during the last five years are shown below:—

Year.	Admissions.			Re-admissions		
	Males.	Females.	Total.	Males.	Females.	Total.
1916	747	477	1,224	109	93	202
1917	710	393	1,103	109	98	207
1918	670	493	1,163	150	145	295
1919	726	560	1,286	104	94	198
1921*	711	622	1,333	115	106	221

\* Year ended 30th June.

Of the admissions in 1920-21, natives of New South Wales numbered 939, England 219, Ireland 81, Scotland 44, other British countries, 219, foreign countries 52.

During 1920-21 the number of patients who died in the mental hospitals was 589, or 8.1 per cent. of the average number resident; 585 persons, or 8.1 per cent. were discharged as recovered, and 142, or 1.9 per cent., as relieved. The death-rate is usually between 7 and 8 per cent.

The records of persons admitted during 1920-21 show that among the exciting causes of insanity intemperance in drink is most prominent, particularly among men; among predisposing causes the most important are congenital defects, hereditary influence, and old age.

The average weekly cost of maintaining mental patients in Government hospitals during the year 1920-21 was 27s. 0½d. per patient, of which the State paid 23s. 9½d., the balance being derived from private contributions. The following table shows the average weekly cost per patient from 1916 to 1921:—

Year.	Annual Cost of Maintenance of Patients.	Cost of Maintenance of Patient per week.		
		To State.	Private Contributions.	Total.
	£	s. d.	s. d.	s. d.
1916	306,569	14 7½	2 9½	17 5½
1917	311,757	14 9½	2 10	17 7½
1918	335,559	15 6	2 10½	18 4½
1919	391,517	18 2½	2 11½	21 2
1920-21	512,797	23 9½	3 3	27 0½

The increase in the cost of maintenance is due mainly to benefits conferred on the staff, such as increased remuneration due to awards and the incidence of the basic wage, Workmen's Compensation Act insurance, and to the higher cost of commodities. In 1920-21 the cost of 80 voluntary patients is included.

Reception houses have been established at Sydney, Newcastle, and Kenmore, where affected persons are placed under observation, and treatment is provided for attacks of short duration, and for alcoholic cases which have developed mental symptoms. The number of patients under care during 1920-21 was 1,831; 1,138 were transferred to mental hospitals, and 666 were discharged as recovered or relieved.

There is a small State hospital adjoining the Reception House at Sydney for the treatment of uncertificated patients in the earlier and curable stages of mental diseases. Accommodation is provided for 20 male patients; and during 1920-21 the number treated was 111; 96 were discharged, 1 died, and 14 remained at the end of the year.

Provision is made also in the State mental hospitals for the admission of persons who submit themselves voluntarily for treatment, and a new hospital was opened recently for voluntary patients with incipient mental and nervous affections. Thus expert treatment may be obtained by persons whose condition does not warrant certification as insane or compulsory detention.

#### DEAF-MUTISM AND BLINDNESS.

The number of persons who were deaf and dumb, as ascertained at the census of 1911, was 640, equivalent to one person in every 2,573 of the population.

The rate at ages 10 to 20 is the highest; whereas, since deaf-mutism is an affliction of childhood, it is reasonable to expect that the rates below those ages would be the highest. The anomaly probably arises from the unwillingness of parents to make known this infirmity in their children.

Excluding children under 10, the rate declines more or less regularly as the age advances. At all ages over 30 the female rate is higher than the male.

The number of persons afflicted with blindness at the census of 1911 was 1,011; this is equivalent to one person in every 1,629. The higher proportion which exists among males is probably due to the greater risk of accident to which they are exposed.

Among both sexes the rate increases from the lowest to the highest ages, and rapidly after age 60. Practically at all ages the male rate is higher than the female. The majority of young persons afflicted with blindness were probably so at birth or soon after.

The care and education of the deaf and dumb and the blind are undertaken at several institutions. The New South Wales Institution for the Deaf and Dumb and the Blind is maintained partly by Government subsidy and partly by public subscriptions; special educational courses are provided, the fees being remitted in cases of financial inability. The Sydney Industrial Blind Institute undertakes the care of the adult blind, and provides industrial training to enable them to earn a livelihood. Homes for the blind are conducted in connection with this institution, and a free circulating library of embossed books is provided. Denominational institutions for the instruction of deaf mutes are conducted at Waratah and Westmead, and one for blind girls at Liverpool.

Under the Commonwealth invalid pension system provision is made for the payment of pensions to permanently blind persons above the age of 16 years.

#### CHILD WELFARE.

The measures adopted in New South Wales to promote the welfare of children fall within three classes, viz., those relating to the preservation of infant life; to the care and maintenance of neglected, destitute, or defective children; and to the reformation of delinquent children.

*Legislation.*

The State Children Relief Act, 1901, which consolidated Acts of 1881 and 1896, relates to State wards; it provides for the establishment of the State Children Relief Board to direct a system of boarding-out the children, and to provide special treatment when necessary, also to afford assistance for the maintenance of children of widows and deserted wives.

The Children Protection Act, 1902, regulates the adoption, nursing, and maintenance of children under 3 years of age who are placed in foster-homes by private persons; it provides also for the inspection of maternity hospitals, and for the protection from neglect or ill-treatment of boys under 14 years of age and girls under 16 years, and prohibits the employment of children in unsuitable occupations.

The Infant Protection Act of 1904 provides for the supervision of institutions used for the care of children under 7 years of age, and for the determination of claims for maintenance in respect of illegitimate children.

The Neglected Children and Juvenile Offenders Acts of 1905, amended in 1913, deals with the protection and control of neglected and uncontrollable children and juvenile offenders; under its provisions the Children's Courts have been established, of which particulars are given in the chapter on Law Courts. These Acts provide also for the establishment of industrial schools and reformatories, and of shelters for the temporary detention of children, and for the licensing of children engaged in street-trading.

The Deserted Wives and Children Acts of 1901 and 1913 relate to the maintenance of wives and legitimate children; any person failing to comply with an order to contribute towards their maintenance may be committed to prison, and his earnings there are applied to the satisfaction of the order.

The Notification of Births Act of 1915, which is operative in the districts of Sydney and Newcastle, requires that the birth of a child must be notified to the Health authorities within thirty-six hours. By this law, cases in which advice or assistance is needed are brought under cognisance at the stage when measures to safeguard the health of infants are most efficacious. A Federal law passed in 1912 authorises the payment of a maternity allowance of £5 to mothers of children born in Australia.

The Juvenile Smoking Suppression Act of 1903 restricts the use of tobacco by juveniles; the Liquor Act prohibits the supply of intoxicating liquor to young children, or their entry to the bar of licensed premises. Conditions of child labour and of apprenticeship are regulated by laws which have been discussed in the chapters relating to the Manufacturing Industry and to Employment. The Public Instruction Act requires the regular attendance at school of all children between the ages of 7 and 14 years. The Testator's Family Maintenance and Guardianship of Infants Act, 1916, assures to the family of a testator maintenance from the estate, and regulates the guardianship of infants.

An Act was passed in 1919 to incorporate the Royal Society for the Welfare of Mothers and Babies, which had been established under the aegis of the Government in the previous year, with the object of co-ordinating all measures for the welfare of mothers and babies. The main objects of the Society are the saving of baby life, the amelioration of the conditions of life of children up to school age, and the ensuring of proper nursing and health conditions of mothers before and after childbirth.

*Preservation of Infant Life.*

Amelioration of the conditions of infant life has become the subject of widespread attention as the result of the recognition of the fact that the greatest improvement can be effected in the initial stages of life with far-reaching results concerning the social and economic welfare of the com-

munity. In New South Wales there has been a lack of co-ordination, but steps are being taken to secure a systematic organisation of all public and private effort in this direction.

Facts relating to infant mortality, as shown in the chapter on Vital Statistics, indicate that a large proportion of the deaths are due to preventable causes, and in 1904, with the object of reducing the wastage, the Sydney Municipal Council inaugurated a movement for the instruction of mothers in hygiene, and appointed a trained nurse inspector to visit the homes of newly-born infants. Since 1904 there has been a marked improvement in the infantile mortality rate.

In 1914 Baby Clinics were established by the Government, the first being in the Metropolitan area, where the organisation had been commenced by private effort; subsequently clinics were opened in other industrial centres. A staff of nurses and an honorary medical officer are attached to each clinic; the nurses instruct the mothers in hygiene, and make arrangements for medical treatment of mothers and children when necessary. During 1921 there were thirty-four clinics in operation; the attendances numbered 131,845, and the nurses paid 50,946 visits to cases within the area served by the clinics; these figures show that there has been substantial progress since the previous year, when there were 117,000 attendances and 32,000 visits by nurses. In June, 1922, the number of clinics in operation was 34, viz., Metropolitan 20, Newcastle 5, Maitland and Cessnock 4, Broken Hill 4, and Wagga 1.

The Royal Society for the Welfare of Mothers and Children has established a welfare training school for nurses, and in this institution trained nurses may receive a post-graduate course in infant hygiene, and women not holding nurses certificates may be trained as nurses of children in private homes. The Society has established two welfare centres in the Metropolis, and an Infant Welfare Training School for Nurses, each with accommodation for a baby clinic, day nursery, kindergarten, playground, and milk and ice depôt.

In the outlying country districts nurses engaged by the Bush Nursing Association afford assistance to mothers and advise them as to the feeding and treatment of children.

The Day Nursery Association maintains three day nurseries in the city for the benefit of working mothers, who may leave their children at the nurseries during the day; food, clothing, and medical advice are provided, also kindergarten tuition, and during 1920 the daily average number under care was 105.

#### *Institutions for Mothers and Children.*

The State has established six maternity homes and hostels in the Metropolitan district and a hospital for the treatment of children suffering from gastro-enteritis and other diseases peculiar to infancy. Other establishments, including several hospitals for women, are maintained by public subscriptions and donations, with the assistance of grants from public revenue, and by religious and other private organisations. The Sydney Benevolent Society, which was founded in 1813 for the purpose of dispensing charitable relief, controls a hospital for women with 173 beds, and 41 beds in the open air, a hospital for sick children with 65 beds, and 20 beds in the open air, and a welfare house for homeless children and foundlings; State subsidies and public contributions are the main sources of the Society's revenue.

Sick children are treated in all the general public hospitals, one containing over 200 beds being devoted entirely to their care.

The homes for infants, licensed under the Infant Protection Act, are classified in two groups, viz., those for six children or more, being mainly charitable institutions, supported by voluntary subscriptions, and those for the reception of less than six children, being generally private dwellings. In

1921 there were 31 licensed institutions with 560 inmates under 7 years of age, and 45 private dwellings were registered.

#### *Maternity Allowances.*

The Maternity Allowances Act of the Commonwealth came into operation on 10th October, 1912; it provides for the payment of a sum of £5 in respect of births occurring in Australia. The allowance is payable to the mother upon notification within three months after the date of the birth; payments are made in respect of still-born children if they are viable, but one allowance only is payable in the case of plural births. Women who are Asiatics or aboriginal natives of Australia or of the Pacific Islands are not entitled to allowances. The following statement shows the number of claims passed for payment in New South Wales in each year up to 31st December, 1921, in comparison with the number of confinements:—

Year.	Confinements. (excluding Still- births).	Maternity Allowances.	
		Claims passed for payment.	Amount.
			£
1912, from 10th October ...	13,304	5,604	28,020
1913 ... ..	51,587	51,564	257,820
1914 ... ..	53,042	53,690	268,450
1915 ... ..	52,280	52,028	260,140
1916 ... ..	51,511	51,992	259,960
1917 ... ..	51,834	52,600	263,000
1918 ... ..	50,149	50,320	251,600
1919 ... ..	47,990	48,510	242,550
1920 ... ..	53,368	54,710	273,550
1921 ... ..	54,047	54,390	271,950
Total ... ..	479,112	475,408	2,377,040

During the first three months after the commencement of the Act the number of claims was less than half the number of confinements; at that time the provisions of the Act were not widely known, and many births were not registered until the period of sixty days allowed under the Registration Act had almost expired. Now, however, as a result of the maternity allowance, it has become customary to register births within a week, and it is apparent that all classes of the community, not only those in needy circumstances, claim the benefit provided by the Act. In seven out of the last eight years the number of claims passed for payment exceeded the number of confinements; this is due mainly to the fact that still-births are not included in the number of confinements, though allowances may be made in respect of those of viable children.

#### *Neglected, Destitute, and Defective Children.*

In New South Wales the treatment of neglected and destitute children has been developed along the lines of the boarding-out system, and it is an accepted principle that when it is necessary for the State to interfere with the conditions of family life in the children's interests, the children should be reared in the natural surroundings of a home; therefore treatment in institutions is restricted to special cases.

When the boarding-out system was inaugurated in 1881 a special Government Department was organised for the purpose of supervising the system, and control was vested in the State Children Relief Board. The Board is appointed by the Governor; membership is limited to nine persons, but the Act contains no proviso as to special qualifications of the members. The executive functions are conducted by a staff of salaried officers, including

a number of inspectors, and at the present time the chief executive officer is president of the Board.

The Department is subject to the direction of the Minister for Public Instruction, and the Board is the authority to direct the boarding-out of State children, to issue licenses for the reception of the children as boarders, to apprentice them, to arrange terms for their permanent adoption, or to restore them to parents and guardians. The Board is authorised also to pay contributions from public funds for the maintenance in their own homes of children of widows and deserted wives in necessitous circumstances; and it maintains cottage homes for the reception of sick or invalid children.

In addition to its functions under the State Children Relief Act, the Board is charged with duties under other Acts relating to children, including inspection and supervision under the Children's Protection Act of children placed in private homes by their parents; licensing of private institutions under the Infant Protection Act, and the conduct of affiliation cases in the courts, the care of children committed to its care by the Children's Courts and those released on probation; and the licensing of children engaged in street-trading or employed in theatres.

#### *Children under Supervision.*

The number of children under the supervision of the State Children Relief Board, classified in accordance with the statutory provisions under which they are controlled, is shown below.

The total number of children under its supervision in terms of the various Acts at 5th April, 1921, was 22,252, as compared with 19,915 in the previous year:—

Classification.	1911-12.	1915-16.	1918-19.	1919-20.	1920-21.
Boarded-out apart from their Mothers ...	4,677	5,081	4,581	4,979	5,403
Boarded-out with their Mothers ...	4,453	7,310	8,257	10,797	12,839
Registered under Children's Protection Act.	559	693	431	355	294
In Institutions Licensed under Infant Protection Act.	263	500	429	465	579
Engaged in Street-trading ...	856	695	902	1,216	1,058
Employed in Theatres ...	216	180	276	320	400
Released on Probation ...	1,148	1,566	2,278	1,783	1,679
Total ...	12,172	16,025	17,154	19,915	22,252

There are a number of institutions conducted by religious bodies and other organisations, in which destitute children are placed by their natural guardians in preference to boarding-out under the State system; the institutions receive a small number of children from the Children's Courts. At the end of the year 1920, there were 2,799 children in these institutions, as shown in the following statement:—

Institutions.	Boys.	Girls.	Total.
General Public ...	204	172	376
Church of England ...	85	211	296
Roman Catholic ...	618	923	1,541
Methodist ...	8	43	51
Presbyterian ...	212	128	340
Salvation Army ...	124	68	192
Hebrew ...	2	1	3
Total ...	1,253	1,546	2,799

In a few cases the parents contribute towards the support of their children, but usually they are maintained by the organisations controlling the establishments.

*Expenditure of State Children Relief Department.*

The gross amount expended by the Government during the year ended April, 1921, on account of the services of the State Children Relief Department, was £390,652, of this amount, £109,963 represented the cost of maintenance of children boarded-out apart from their parents, while allowances to widows and deserted wives towards the support of their own children amounted to £223,583. Contributions by parents and relatives and repayments of maintenance allowance amounted to £7,713.

The following statement shows the expenditure of the State Children Relief Department at intervals since 1901-02:—

Year.	Boarding-out.		Cottage Homes.	Children's Protection Act and Supervision of School Attendance & of Juvenile Offenders.	Total Expenditure.	Contributions by Parents and other Revenue.	Net Expenditure by Government.
	State Wards.	Children of Widows, etc.					
	£	£	£	£	£	£	£
1901-02	43,010	19,262	3,371	73	65,716	1,542	64,174
1911-12	46,001	33,742	13,243	10,187	103,173	4,361	98,812
1915-16	57,996	76,989	11,599	10,047	156,631	6,357	150,274
1916-17	64,378	79,405	17,892	12,828	174,503	5,880	168,623
1917-18	63,534	89,364	14,428	16,030	183,356	6,580	176,776
1918-19	73,680	108,228	12,729	16,870	211,507	7,670	203,837
1919-20	85,554	133,390	20,628	17,794	257,366	6,674	250,692
1920-21	109,963	223,583	27,661	29,445	390,652	7,713	382,939

The increase in 1918-19 in the amount expended in connection with children boarded-out with their own mothers was caused by an increase first granted in that year in the rates of payment.

*State Wards.*

The State wards are boarded-out to persons deemed to be eligible after strict inquiry by the Board, the maximum number of children under the care of one guardian being three, except in cases of families comprising a greater number, brothers and sisters being placed usually in the same home. Preference is given to districts with favourable climatic conditions and with facilities for supervision by inspectors and for the education of the children.

The supervision is undertaken by salaried inspectors, whose efforts are supplemented by honorary officers. Women inspectors visit and inspect infants placed out apart from their mothers; and all such infants in the Metropolitan area must be submitted to medical examination every fortnight during the first twelve months of life.

In April, 1921, the number of children boarded with private families was 5,403, including 3,118 boys and 2,285 girls; of this number 79 boys and 156 girls were maintained without subsidy from the State. The rate of payment for each child is 15s. per week up to 1 year of age and 10s. up to 14 years of age.

The Board may arrange the permanent adoption of orphan children or of those surrendered for adoption; under this provision there were at 5th April, 1921, 111 boys and 157 girls. This law, however, does not prohibit



the private arrangement of adoptions, and many are arranged without the cognisance of the Board.

State children requiring special treatment are accommodated in cottage homes; there are twelve at Mittagong, four in the Pennant Hills district, and one at Raymond Terrace. Five cottages are reserved for invalids, each accommodating from twenty to twenty-five children, in charge of a matron, who is responsible for the management of the home and the nursing of the children; four cottages are set apart for mentally-deficient children. Eight of the cottages at Mittagong are used for juvenile delinquents committed by the Children's Courts. The number of children in these homes at 5th April, 1921, was, 433, viz., 352 boys and 81 girls. There were also 80 boys and 50 girls under treatment in hospitals.

Children under the control of the Board are trained for work in various industries, and are apprenticed with suitable employers. The terms of indenture prescribe a wage payment and pocket-money on a specified scale, the wages being banked half-yearly to the credit of the apprentice; one-third of the accumulated amount is paid over on completion of the apprenticeship, the balance remaining at interest till age 21 is attained, unless exceptional circumstances arise, when the Board may allow the money to be paid earlier.

The majority of the girls are apprenticed in domestic service, and the boys to farmers, orchardists, and artisans in country districts. In April, 1921, there were 959 apprentices (535 boys and 424 girls) under indentures.

From 1887 to April, 1921, the total collections of the Apprentices Fund were £112,540, of which £92,345 had been paid over on completion of the indentures; £20,810 remained to the credit of the fund, the collections for the year having been £6,583.

#### *Relief of Children of Widows, etc.*

A most important provision of the State Children Relief Act provides for contributions towards the support in their own homes of the children of widows in necessitous circumstances and of wives deprived of their husband's support through desertion, illness, infirmity, or imprisonment. There has been a substantial increase in the number of applications for assistance during the last three years on account of the high prices of food and other necessities.

In April, 1921, the number of mothers receiving this form of relief was 4,800, including 2,546 widows, 948 deserted wives, and 845 wives whose husbands were ill, 306 insane, 155 in gaol. The number of children in respect of whom payments were made was 12,839. There is no law in operation in New South Wales to compel relatives, other than parents, to contribute towards costs of maintenance.

#### *Protection of Children.*

Under the provisions of the Children's Protection Act persons in charge of maternity homes are required to furnish particulars to the State Children Relief Board of all births occurring therein, and must undertake the responsibility of seeing that no child is taken from the home without permission, except in the custody of the mother. Children under 3 years of age who are placed in foster homes are subject to inspection.

The Act prohibits the employment of children in dangerous occupations and children are not allowed to take part in public performances unless under license; theatre licenses may be issued in the metropolitan district to children over 10 years of age, but children under 14 are not allowed to travel with touring companies.

The number of foster homes and of the children under supervision during the last five years is shown below, also the number of theatre licenses issued for children.

Particulars.	1917.	1918.	1919.	1920.	1921.
Foster Homes Registered ... ..	126	110	40	30	26
Children Registered... ..	1,112	927	762	693	612
„ Died ... ..	34	8	13	15	11
„ Discharged from Supervision ...	579	488	378	366	311
„ under Supervision at 31st Dec....	499	431	355	294	290
Theatre Licenses for Children ... ..	240	276	320	400	280

#### *Street-trading by Children.*

Street-trading is defined by law as hawking newspapers, matches, flowers, or other articles, singing, or performing for profit, or any like occupation conducted in a public place. Girls are not allowed to engage in street-trading, and boys under 16 years must be licensed. The minimum age at which a license is granted is 12 years, and in case of certain occupations, 14 years. Licenses are renewable half-yearly, and licensees are required to wear a metal arm-badge whilst trading.

Precautions are taken by supervisors to ensure the regular school attendance of licensees under 14 years of age. The trading hours prescribed for boys between ages 12 and 14 are from 7 a.m. to 7 p.m., and for boys over 14 years of age, from 6 a.m. to 10 p.m.

During the half-year ended 31st March, 1922, licenses were granted to 1,058 boys, their ages and the purposes for which licenses were granted were as follows:—

Street-trading.	12 years and under 14.	14 and under 16.	Total.
Hawking Newspapers ... ..	935	535	1,470
„ Flowers, etc. ... ..	24	30	54
„ Other Articles ... ..	7	12	19
Total ... ..	966	577	1,543

#### *Mentally-deficient Children.*

There is not a comprehensive system for the treatment of mentally-deficient children. Special accommodation is available in the State mental hospitals for those who may be classed as lunatics or idiots, but provision has not been made for the treatment of the feeble-minded, *i.e.*, those who are incapable of acquiring education in the ordinary schools, but who, with special training, may be taught to engage in useful employment under supervision. The matter is, however, receiving the attention of the school medical and teaching authorities.

It is recognised that much juvenile delinquency is the result of mental deficiency, and a number of the children brought before the Children's Courts

are tested mentally by the medical officers; it is desirable that the examinations should embrace all the children coming under the operations of the Juvenile Offenders Act.

Four of the cottage homes established by the State Children Relief Department are reserved for feeble-minded children and the older boys are trained in such trades as bootmaking, tailoring, toy-making, and carpentering, as well as in out-door work. A teacher from one of the homes was sent recently to America to gain experience in the training of children of this class.

#### *Delinquent Children.*

Cases of juvenile offenders under the age of 16 years are dealt with in the Children's Courts, to which are appointed magistrates with special qualifications for the treatment of delinquent children. Leniency is an outstanding feature in the treatment of the young offenders, and a large number are released after admonishment, in order to obviate the recording of a conviction; in other cases it is the practice where possible to release the children on probation, and committal to an institution is a final resort. The children brought before the courts are classified into thirteen distinct groups, with the object of providing each class with the special treatment they require. Consideration is given to the character of the child and the circumstances surrounding the committal of the offence, the home environment, the character of the parents, and the nature of their control.

The children on probation are under the supervision of the State Children Relief Department. The number released from the Children's Courts during the year ended 5th April, 1921, was 1,679, viz., 1,531 boys and 148 girls; 178 had been brought before the court as neglected, 270 as uncontrollable, 797 had been convicted for stealing, and 434 for other offences. The Metropolitan and suburban courts released 1,284 children, and the country courts 395.

The terms of probation were:—One year and under, 1,499; one or two years, 118; over two years, 62. Cases in which the terms of probation exceeds one year usually relate to children committed to the care of relatives or to private establishments, the length of term implying legal authority to retain custody of the children apart from their parents.

In the Metropolitan district children are accommodated in shelters in proximity to the court whilst awaiting the hearing of their cases or transfer to institutions to which they have been committed; and shelters have been established in eight country towns.

The State institutions for the reformation and training of delinquent children are the Farm Home for Boys at Mittagong, which consists of eight of the cottage homes controlled by the State Children Relief Department, the Gosford Farm Home for Boys, and the Girls' Industrial School at Parramatta. The Mittagong Farm Home is primarily for the reception of children who require treatment before being released on probation, and others guilty of minor delinquencies; the Gosford institution is for older boys, who need stricter discipline or who show tendencies liable to be developed into criminal habits, and those who have failed to respond to probation or to treatment in the Mittagong Farm Home. At Gosford 180 boys were admitted during the year 1921 and 149 were discharged, including 131 who were released on probation. At Mittagong there is a daily average of 320 boys, about 600 being admitted each year. The Industrial School for Girls at Parramatta is divided into two branches for the purpose of classifying the inmates, and a training home is attached; the institution receives uncontrollable girls between the ages of 13 and 16 years. During the year 1921 the number of girls admitted was 76 and 68 were discharged; the number remaining at the end of the year was 142.

Under certain conditions children may be committed to approved institutions established by the religious organisations.

The Neglected Children and Juvenile Offenders Act provides that children committed to institutions may be detained in custody until the expiration of the period specified by the Court, or until reaching the age of 18 years; they may be indentured as apprentices with suitable employers or restored to the custody of parents or guardians.

A Truant School is conducted at Guildford for the detention of boys under 14 years of age who are persistent truants; the average period of detention is about two months. The gross enrolment during 1921 was 247, and the average attendance 59.

The disposal of the children brought before the Children's Courts during the year ended April, 1921, is shown in the following statement:—

Disposal.	Boys.	Girls.	Total.
Released on Probation to Parents ... ..	956	67	1,023
"    "    "    other Persons ... ..	93	38	131
Committed to care of State Children Relief Board ... ..	2	9	11
"    Ormond House, Paddington ... ..	38	32	70
"    Farm Home, Mittagong ... ..	166	...	166
"    Farm Home, Gosford ... ..	113	...	113
"    Girls' Training Home, Parramatta ... ..	...	27	27
"    "    Industrial School, Parramatta ... ..	...	9	9
"    Truant School ... ..	125	...	125
Fined ... ..	368	3	371
Withdrawn ... ..	652	75	727
Dismissed or Discharged ... ..	28	4	32
Total ... ..	2,541	264	2,805

Further particulars regarding offenders charged at the Children's Courts are given in the chapter of this volume relating to Law Courts.

#### *Medical Inspection of School Children.*

A system of medical inspection of school children was organised in New South Wales in 1913, and arrangements made to examine each child at least twice during the period of school attendance (which is compulsory between the ages of 7 and 14 years). The inspections are conducted triennially by the School Medical Service of the Department of Education, which now possesses a staff of thirteen Medical Officers, seven full-time and six part-time Dentists, six School Nurses, and nine Dental Assistants.

Full figures are not yet available for the year 1921, but the approximate number of children examined in schools was 60,000, of whom 12,000 were in the metropolis, 27,000 in country towns, and 21,000 in rural areas. The defective numbered about 55 per cent., the chief types of defect being dental, visual, deafness, and of the nose and throat.

The medical inspection reaches its full value when steps are taken to remedy the defects; therefore, in the metropolitan district, special facilities are provided at the hospitals for medical treatment (with "following-up" work by School Nurses), while a School Dental Clinic is established in connection with the School Medical Service.

In the country districts, facilities for treatment are provided in connection with the work of the School Medical Service, as follow:—One Traveling Hospital (or Rural School Clinic), staffed by a Medical Officer, Dentist, and Trained Nurse, who, in addition to the regular medical inspection, provide full dental attention, prescribe glasses, and give advice on many other defects. The Hospital's work is specially designed to meet the needs of remote and sparsely-populated districts.

Six Travelling Dental Clinics visit the larger country centres after the completion of medical inspection there, and all children from those centres and surrounding districts have an opportunity of attending the clinics and obtaining treatment.

The Travelling Hospital examined approximately 4,000 children (of whom the great majority also received treatment) during 1921, while fully 16,000 children were treated by the Travelling Dental Clinics.

The average cost of treatment per child is estimated to be about 9s.

Among other activities of the School Medical Service, a special feature is made of the examination of delinquent children. Medical psychological reports are furnished on over 2,000 boys who pass through the Children's Court yearly. Special supervision is now exercised over the health of Training College students and High School girls.

Further particulars regarding the work of the School Medical Service are given in the chapter on "Education."

#### CHARITABLE RELIEF.

In addition to hospitals for the treatment of sickness or disease, there exist both in the Metropolis and in the country, other institutions, such as homes for the aged, for women, and for the blind, deaf, and dumb; for granting casual aid to indigent persons; and for the help of discharged prisoners.

The State maintains five asylums, others are maintained partly by State aid and partly by private contributions, and a few are wholly dependent on private aid.

Four of the State asylums are for men and one is for women. These institutions were established as asylums for aged and destitute persons, but since the introduction of the old-age pension system the character of the work of the institutions has changed considerably; they are developing into hospitals, and are used to a large extent for the treatment of chronic ailments and contain special wards for persons suffering from cancer, tuberculosis, and venereal diseases.

The average number resident in the State asylums during the year 1920 was 3,030, as compared with 2,894 during the previous year. The average weekly cost per inmate in the State asylums in each year of the three years 1918 to 1920 is shown below:—

Head of Expenditure.	1918.	1919.	1920.
	s. d.	s. d.	s. d.
Salaries and Money Allowances ... ..	4 4	4 7	4 11
Provisions, Extras, Medical Comforts, and Forage	9 10	10 10	13 0
All other Expenses ... ..	0 11	0 9	1 0
Gross Weekly Cost for Maintenance ... ..	15 1	16 2	18 11
Average Weekly Contribution towards Revenue	2 9	2 5	3 0
Net Weekly Cost ....	12 4	13 9	15 11

In the hospitals attached to these institutions 5,732 cases of illness were treated during 1920—males 4,511, and females 1,221—and at the end of the year 1,249 cases remained under treatment.

The total number of inmates in the charitable institutions during the year 1920 was 25,051 persons, including 9,468 children; the discharges numbered 16,389, and the deaths 1,069; the number remaining at the end of the year was 7,593, viz., 2,838 men, 1,356 women, and 3,399 children. The revenue amounted to £742,133, including State aid £559,533; and the expenditure to £749,158; the value of the outdoor relief afforded by the institutions was estimated at £77,091.

A number of societies are active in the matter of charitable relief, *e.g.*, nursing, ambulance, and shipwreck relief; and in many suburbs and country towns benevolent societies have been formed for the relief of local distress. The District Nursing Association and the Bush Nursing Association engage nurses to visit the sick, gratuitously if needed, the former in the Metropolitan and the latter in the country districts. Public charitable collections are made periodically for the relief of distress or with the object of increasing the revenue of hospitals and charitable agencies. The Hospital Saturday Fund collected £29,725, and the United Charities Fund £6,794, in the Metropolitan district during 1921-22.

The following is a comparative statement of the revenue and expenditure of the charitable institutions and societies:—

Particulars.	1901.	1911.	1918.	1919.	1920.
Institutions and Societies ... ..	160	190	198	195	200
Revenue—	£	£	£	£	£
State Aid ... ..	153,752	192,941	342,597	406,282	604,160
Subscriptions, etc. ... ..	34,906	78,786	133,460	130,225	161,917
Other ... ..	44,999	67,519	76,187	86,164	97,196
Total ... ..	233,657	339,246	552,244	622,671	863,273
Expenditure—					
Buildings and Repairs ... ..	40,247	21,063	37,222	30,837	34,238
Maintenance, Salaries, Wages ...	174,679	293,460	473,965	574,257	775,879
Other ... ..	39,008	11,142	43,165	22,378	44,121
Total ... ..	253,934	325,665	554,352	627,472	854,238

Financial aid from the State amounted to £604,160 in 1920, and represented 70 per cent. of the total revenue.

#### PROTECTION OF THE ABORIGINES.

The protection and training of the aboriginal natives of New South Wales are controlled by a Board consisting of the Inspector-General of Police and a maximum of ten other members appointed by the Governor.

At a census taken on 4th April, 1921, there were in New South Wales 7,551 aborigines, viz., 1,281 full-bloods and 4,867 half-castes, 1,047 quadroons, and 356 octoroons.

At the end of December an area of about 21,735 acres in various reserves had been set apart for aborigines. Dwellings have been erected on the reserves; the residents are encouraged to work, and assistance in the form of food and clothing is supplied when necessary. The average number receiving aid during the year 1920 was 1,906.

Aboriginal children are required to attend school until the age of 14 years, and a number of schools have been established for their exclusive use; the

attendance in 1920 numbered 708. The Board may assume control of the children, and apprentice them, or place them in training homes.

The expenditure by the Aborigines Protection Board during the year ended 30th June, 1921, amounted to £40,474, including £23,010 for general maintenance, £5,119 for the purchase of stores, £7,315 for educational purposes, and £598 for medical attention. An amount of £4,269 was expended in connection with products raised on the reserves, and £5,915 was received as revenue from sales; the net expenditure during the year was £34,559.

## PENSIONS.

### *New South Wales Government Pensions.*

No general pension system, other than the old-age and invalid pensions noted subsequently, is in operation in New South Wales; but pension funds have been established in connection with sections of the Public Service, and are maintained partly by deductions from officers' salaries and partly from the public revenue. The existing funds are the Public Service Superannuation Fund, the Police Superannuation and Reward Fund, and the Government Railways Superannuation Fund.

The first Public Service Superannuation Fund was established by the Civil Service Act, 1884, but since the Public Service Act of 1895 new contributors have not been admitted, and in 1895 the existing contributors were given the option of withdrawing from the fund. The officers who elected to discontinue their contributions are entitled under prescribed conditions to receive refunds and gratuities on retirement; officers who have continued to contribute are entitled to an annual pension equal to one-sixtieth of the average annual salary for the last three years' service, multiplied by the years of service, the pensions being payable on retirement through incapacity or at age 60, or on abolition of office. An Amending Act in 1903 provided that on the Superannuation Account becoming exhausted all amounts payable to or out of that account should be paid to or out of the Consolidated Revenue. During the year 1920-21 the expenditure was £178,942, consisting of pensions, £166,843, and refunds and contributions, £12,099; contributions by public servants amounted to £9,555; the balance, £169,387, represented the net charge to Consolidated Revenue. In addition to these amounts, a sum of £3,500 is appropriated annually in terms of the Constitution Act for the payment of pensions to certain Government officers; the pensions paid during 1920-21 amounted to £1,133, the balance unallotted being £2,367.

The second Public Service Superannuation Fund was constituted by the provisions of the Superannuation Acts, 1916 and 1918, which came into operation on 1st July, 1919. These Acts provide a scheme of pensions and other benefits for employees of the New South Wales Government and other public bodies, except those subject to the Railway Service and Police Superannuation Acts. One-half of the cost of the scheme is borne by the employees, except where otherwise provided, and the balance by the employers. The age of retirement is 60 years, but women may elect to contribute for retirement at age 55; upon the death of a contributor or pensioner his widow receives one-half of the amount of pension for which he has contributed, and £13 per annum for each child under 16 years of age. Contributions by employees are compulsory and vary in accordance with the age and salary of the contributor. Tables showing the rates of contributions and of pensions were published in the 1919 edition of this Year Book.

The Board is empowered to take over insurance policies as desired by employees and to pay the premiums, charging compound interest at the

rate of  $3\frac{1}{2}$  per cent.; to accept voluntary savings from employees, allowing interest at the rate of  $3\frac{1}{2}$  per cent.; or to make advances to employees for the purchase of homes and other purposes. Up to the 30th June, 1921, seventy-two life insurance policies had been taken over, and one employee was contributing voluntary savings. No advances had been made.

The total number of employees contributing as at 30th June, 1921, was 18,345, made up as follows:—

	Men.	Women.
Corporate Bodies ... ..	1,931	186
Public Departments under direct Ministerial control...	10,115	6,113
	<hr/> 12,046	<hr/> 6,299

During the year ended 30th June, 1921, the receipts of the fund amounted to £702,238, including contributions of £239,165 from employees, £425,205 from employers, and £37,709 interest; the expenditure amounted to £24,251, including £11,748 refunded to contributors, and £11,859 paid as pensions. The total cost of administration for the year was £10,560, which was a charge on Consolidated Revenue. A sum of £659,848 was invested in securities of the State and Federal Governments and of the Municipal Council of Sydney.

Certain sections of the Superannuation Act, which became operative in 1916, conferred pension rights without contribution on employees who were 60 years of age, and had at least ten years' service; the amount of these benefits during the year ended 30th June, 1921, was £100,472.

A pension fund for the police force was established in 1899, amending legislation being passed in 1906. Annual contributions by members of the service are at the rate of 4 per cent. of salary; other sources of revenue are penalties imposed on members of the police force, and penalties and damages awarded to the police as prosecutors, also the proceeds of the sale of unclaimed goods in possession of the police. The amount of pension payable to members who entered the police service prior to 1906 is graduated in accordance with length of service, and ranges from half the salary, less 3 per cent., on retirement after fifteen years' service, to the whole of the salary, less 3 per cent., after thirty years' service. For the members who entered the service after 1906 the pension is one-fortieth of the salary on retirement for each year of service, less 3 per cent., up to a maximum of three-fourths of the salary on retirement; the retiring age is 60 years, except in cases of incapacitation, but under prescribed conditions the services of any member of the force may be retained until he reaches the age of 65 years. During the year ended 30th June, 1921, the receipts of the Police Superannuation and Reward Fund amounted to £135,161, including deductions from salaries, £55,161, and special appropriation from Consolidated Revenue, £80,000; the disbursements, £136,597, included pensions, £130,155; gratuities, £6,051; and miscellaneous, £391.

The Railway Service Superannuation Fund was established in October, 1910; the contributions from employees of the Railway and Tramway services are at the rate of  $1\frac{1}{2}$  per cent. of salary, and the State provides all that is necessary beyond such contributions. The amount of pension payable is one-sixtieth of the average annual salary during term of service, multiplied by the number of years of service, the maximum pension being two-thirds of the average salary. At 30th June, 1921, there were 39,570 contributors; the number of pensions in force was 2,098 amounting in the aggregate to £150,662 per annum. The average rate of pensions was £72 per annum. Since the inception of the fund 2,775 pensions have been granted, and 616 pensioners have died; 57 officers under 60 have been re-employed, and 4 pensions have been written off the books. During the year



1920-21 the receipts of the fund amounted to £147,273; the disbursements, representing pensions, gratuities, refunds, etc., amounted to £158,060.

### War Pensions.

The Australian Soldiers' Repatriation Act, 1920, passed by the Commonwealth Parliament, provides for the grant of pensions upon the death or incapacity, as the result of warlike operations, of members of the Commonwealth Naval or Military Forces. The general administration of the Act is entrusted to Commissioners, of whom there are three appointed by the Governor-General, but in each State there is also a Board consisting of three members, which determines the pensions.

The rates of pension payable on total incapacity range from £4 4s. to £6 6s. per fortnight, according to rank; in cases of partial incapacity lower rates are assessed by the Commissioners. The wife of a totally incapacitated member receives a pension ranging from £1 16s. per fortnight to £3 per fortnight; widows receive from £2 7s. to £6 per fortnight; widowed mothers receive pensions ranging from £2 to £6 per fortnight, and a pension is payable also on account of each child under 16 years of age.

The loss of two or more limbs, of both legs, feet, arms, hands, or eyes, or of arm and leg, hand and foot, or one eye together with leg, foot, hand, or arm, or the loss of all fingers and thumbs; or lunacy; or wounds, injuries, or disease involving total permanent disabling effects, and very severe facial disfigurements, are regarded as constituting total incapacitation. The amputation of a leg at the hip, or an arm at the shoulder joint, is held to constitute an incapacity of 80 per cent., while the loss of leg, foot, hand, or arm otherwise constitutes 75 per cent. disablement. Blinded soldiers receive a special pension at the rate of £8 per fortnight. Where the pension payable is not more than 30 per cent. of the rate for total incapacity, payment of a lump sum may be substituted.

The number of pensioners under the War Pensions Act as at 30th June, 1921, was as follows:—

Pensioners.	New South Wales.		Commonwealth.	
	Number of Pensioners.	Average Fortnightly Rate.	Number of Pensioners	Average Fortnightly Rate.
Incapacitated Soldiers ... ..	25,525	£ s. d. 1 14 9	79,491	£ s. d. 1 13 10
Dependents of Deceased Soldiers ... ..	13,321	} 0 19 1	49,051	} 0 18 5
Dependents of Incapacitated Soldiers ... ..	26,885		93,995	
Total ... ..	65,731	1 5 2	222,537	1 3 11

The total cost to the Commonwealth Government on account of war pensions during the year 1920-21 was £7,499,401, including cost of administration £109,662.

At 30th June, 1921, there were 65,731 war pensions current in New South Wales, and the annual liability was estimated to be £2,150,538. The actual expenditure on account of pensions in New South Wales during the year ended 30th June, 1921, was £2,331,633.

*Invalid Pensions.*

Invalid pensions were first paid in New South Wales under the Invalidity and Accidents Pensions Act, passed by the State Parliament in 1907, which allowed pensions payable from Consolidated Revenue up to £26 a year to persons over 16 years of age permanently incapacitated for any work.

The State system was maintained until the payment of invalidity pensions was undertaken by the Commonwealth on 15th December, 1910. The pensions paid during the currency of the State Act amounted to £235,012.

The conditions attaching to invalid pensions payable by the Commonwealth are similar to those prescribed by the State Act, the maximum pension being 15s. per week as in the case of old-age pensions. The applicant must have resided for at least five years and have become incapacitated or blind in Australia, but persons permanently incapacitated or blind by reason of congenital defect are regarded as having become so in Australia, if brought to Australia before the age of 3 years. Invalid pensions are not payable to persons whose income or property exceed the limits prescribed in the case of applicants for old-age pensions, or whose relations adequately maintain them. Aliens, Asiatics (except those born in Australia), and aboriginal natives of Australia, Africa, Pacific Islands, and New Zealand are not qualified to receive invalid pensions.

Prior to the commencement of the Commonwealth invalid pension system, New South Wales was the only State in which such a pension scheme was operative; in Victoria pensions were payable to persons permanently disabled whilst engaged in certain hazardous occupations, but only 111 claims were taken over by the Commonwealth. The pensions taken over from New South Wales at 15th December, 1910, numbered 3,498. Particulars of transactions in New South Wales during the last five years are shown below in comparison with 1912, the first complete year of Commonwealth control.

Year ended 30th June.	New Claims.	Invalid Pensions current in New South Wales at 30th June.			Average Weekly rate of Pension as at 30th June.	Estimated Annual Liability as at 30th June.	Estimated Annual Liability per head of Population as at 30th June.
		Males.	Females.	Total.			
1912	1,784	2,549	2,278	4,827	s. d. 9 9	£ 121,836	s. d. 1 5
1917	2,335	5,106	5,697	10,803	12 4	346,528	3 8
1918	2,582	5,669	6,500	12,169	12 4	390,442	4 1
1919	2,659	6,086	7,012	13,098	12 4	419,692	4 3
1920	3,480	6,583	7,754	14,337	14 9	550,134	5 5
1921	3,278	7,016	8,371	15,387	14 9	588,588	5 8

The invalid pensions current in New South Wales on 30th June, 1921, represented 7.5 per thousand of population, compared with 7.1 for the Commonwealth. On 30th June, 1912, the corresponding rates were 2.9 and 2.4 respectively.

*Old-age Pensions.*

The State has recognised it as a duty to prevent destitution among aged persons. The measures adopted were similar to those taken in New Zealand in 1898, and consisted of the grant of a modest pension as a free gift of the State to citizens of good character who, in the prime of life, had helped to bear the public burthens of the State by the payment of taxes and by opening up its resources by their labour and skill.

The scheme was initiated by the Old-age Pensions Act passed by the Parliament of New South Wales in 1900. It commenced to operate on 1st August, 1901; and virtually expired on 1st July, 1909, when that portion of the Commonwealth Invalid and Old-age Pensions Act, 1908-1909, which relates to the payment of old-age pensions to men, came into operation. The portion of that Act authorising payment of pensions to women on attaining age 60 commenced to operate on 15th December, 1910.

The total amount paid for old-age pensions for the period of nine years during which the State system was in operation was £4,009,127, and the cost of administration £165,560 approximately. On the introduction of the Commonwealth administration, 21,292 State pensions were transferred.

The conditions governing the payment of old-age pensions under the Commonwealth have varied but slightly from the conditions prevailing under the State Act; the age qualification is 60 years for women and 65 years for men, with a reduction to 60 years in case of men permanently incapacitated; the length of residence qualification is twenty years in Australia, but absences amounting in the aggregate to one-tenth of the total period of residence are permitted. Naturalised persons are eligible for pensions, but aliens and aboriginal natives are disqualified.

Formerly the maximum pension payable was £26 per annum; this amount was raised to £32 10s. as from 12th October, 1916, and a further increase to £39 per annum was made as from 15th January, 1920, with proportionate reduction in respect of any income or property of the claimant, so that the pensioner's income with the pension shall not exceed £65 per annum in the case of men pensioners and £60 in the case of females. In computing income benefits accruing from friendly societies are not to be reckoned as income, nor gifts nor allowances from children or grandchildren; in assessing the value of property, the home in which the pensioner permanently resides is not included. Money payable to a pensioner while he is an inmate of a benevolent asylum or hospital may be paid to the asylum or hospital for his benefit.

Prior to the introduction of the Commonwealth system, old-age pensions were payable in three States—New South Wales, Victoria, and Queensland.

The following statement shows the applications received in New South Wales, the number of old-age pensions current, and the average rate and total liability for old-age pensions in recent years:—

Year ended 30th June.	New Claims.	Old-age Pensions current in New South Wales at 30th June.			Average Weekly Rate of Pension, as at 30th June.	Estimated Annual Liability, as at 30th June.	Estimated Annual Liability per head of Population, as at 30th June.
		Male.	Female.	Total.			
1912	4,763	13,639	16,029	29,668	s. d. 9 7	£ 734,526	s. d. 8 7
1917	4,553	14,591	19,350	33,941	12 1	1,068,990	11 4
1918	4,689	14,795	20,283	35,078	12 1	1,098,344	11 6
1919	4,634	14,979	20,543	35,522	12 0	1,112,098	11 4
1920	6,231	15,515	21,843	37,358	14 6	1,405,534	13 10
1921	5,727	16,033	23,004	39,037	14 1	1,428,258	13 8

The old-age pensioners in New South Wales represent 19·0 per thousand of population; in the Commonwealth as a whole the rate is 19·1.

The number of old-age pensioners is increasing at a rate faster than the increase of population. This is due to a number of reasons, including the increasing proportion of aged persons in the community, the growth of knowledge as to the rights of aged persons, and the decay of the feeling that an old-age pension is of the nature of a charitable dole.

The total expenditure by the Commonwealth on invalid and old-age pensions during the year ended 30th June, 1921, was as follows:—

	£
Paid as Pensions ... ..	5,074,336
Paid to Benevolent Asylums for Maintenance of Pensioners ...	75,905
Cost of Administration ... ..	88,271
Total ... ..	£5,238,512

### FRIENDLY SOCIETIES.

Friendly Societies occupy a very important position in New South Wales; it is estimated that probably 600,000 persons benefit directly or indirectly from their operations. They exercise a strong influence for good among the industrial classes by inculcating habits of thrift, and by preventing and relieving distress, to deal with which would otherwise become an obligation on the public.

The first Friendly Society in New South Wales was founded in 1834, when the Australian Union Benefit Society was established. This society is still operating.

The earliest societies were founded by former members of English orders who had emigrated to Australia before the business of Friendly Societies in Great Britain was placed on a scientific basis, and subjected to legal regulation. The first bodies, therefore, grew up in a more or less irregular way and performed their functions with little supervision until 1899, when an Act of Parliament conferred on the Registrar power to inspect lodge-books, to prosecute in cases of defalcation, and the authority necessary to enforce the adoption of an adequate scale of contributions. In this way stability was ensured, and subsequent improvements in the administration have placed Friendly Societies on a sound legal and scientific basis.

All legislation affecting Friendly Societies was consolidated in the Act of 1912, but two amendments were made in 1913 and further amendments in 1916 and 1920.

The Act provides for the compulsory registration of societies or branches established for the purpose of providing, by subscription of the members, benefits of various kinds including sick pay, funeral donations, and medical attendance and medicine.

In order that the contributions chargeable shall be sufficient to meet obligations, the Act provides that the tables of contribution payable for benefits susceptible of calculation by way of average must be certified by an actuary.

Provision is made also for safeguarding the funds of the societies. All moneys received or paid on account of a particular fund or benefit must

be kept distinct from the moneys paid or received on account of any other fund or benefit, but after valuation the Registrar may authorise surplus moneys belonging to a fund or benefit to be used for the purpose of any other fund or benefit. If the sickness and funeral funds are administered by one central body for the whole society, they may be treated as one fund.

The secretary must furnish to the Registrar a yearly return giving full details relating to the finances and membership of the society.

The Registrar is empowered to appoint inspectors to inquire into and report to him on the affairs of any society or branch. The inspector may demand the production of all books and documents of the society or branch, and may examine on oath its officers, members, agents, and servants in relation to its business.

The benefits assured are fairly uniform in all societies, and consist usually of medical attendance and medicine for a member and his family, with sick pay for the member, and funeral allowances for the member and his wife. The average sickness benefit is 21s. per week during the first six months, 10s. 6d. during the next six months' illness, and 5s. per week during the remainder of illness, this last provision being rendered possible by the system of State subvention, of which more detailed mention is made later. The funeral benefits usually range from £10 to £40 at death of the member according to the period of membership, and a contingent benefit of £10 or £15 is payable on death of the wife. In several societies members may assure for higher sums, and in two of them it is possible to assure for £200, the maximum allowed by law. A separate benefit for widows of members, usually £10, may be assured in most of the societies for a stated contribution.

A valuation of the assets and liabilities of the societies is made in the office of the Registrar every five years. The first valuation was made in 1904, and a brief statement respecting this and the second and third valuations may be found in the Official Year Book for 1918.

The valuation as at 31st December, 1919, has also been completed. The five years covered by this valuation coincided almost exactly with the war period, and the societies had to meet very heavy drains on their funds on account of war mortality, as well as from the heavy sickness and mortality experienced in the influenza epidemic of 1919. Notwithstanding these adverse factors, the results were very satisfactory.

Most of the societies showed a surplus, and the assets of all the societies combined were equal to 20s. 10d. per £1 of liabilities, as against 20s. 7d. as at 31st December, 1914. The funds increased by over £300,000, and the average interest earnings from 4·7 per cent. at the 1914 valuation to 5·4 per cent. for the quinquennium now under review.

The increase in the interest rate accounts, to a very large extent, for the improved position of the societies.

The method of investment of funds had not altered materially except that the amount lent on mortgage at 31st December, 1914, was equal to 84·4 per cent. of the total assets, while the corresponding proportions at 31st December, 1919, was 79·8 per cent. This change is due to the investment by the societies in war loans and in other Government securities.

The average age of male members increased from 35·3 years at the end of 1914 to 37·5 at the end of 1919—a result due to the low rate of admissions throughout the whole of the war period.

The following table shows a comparison of the sickness experience of the members of all societies in specified age groups during each of the last three quinquennial periods:—

Age Group.	Weeks of Sickness per 1,000 members per annum.		
	1905-08.	1909-13	1914-18.
16-20	936	824	884
21-25	841	783	843
26-30	830	783	792
31-35	805	828	873
36-40	850	909	1,014
41-45	1,051	1,024	1,097
46-50	1,319	1,378	1,348
51-55	1,766	1,902	1,906
56-60	2,458	2,845	2,935
61-65	4,204	4,638	4,758
66 and over	7,731	10,130	10,458
All ages	1,281	1,308	1,487

The figures for the quinquennium ended 1918, although they do not include soldiers' sickness, show an increase compared with the results of the previous quinquennium in every age group but one, and the sickness for all ages in this period is nearly 14 per cent. above the 1909-13 figures and 16 per cent. in excess of those for 1905-08. These increases are serious, and if no improvement be shown, must eventually result in depletion of the funds.

It is likely that a considerable portion of the additional sickness, especially at ages over 65, is due to the societies taking more advantage of the subvention provisions of the Friendly Societies Act. It is notable, however, that sickness rates in each of the three valuation periods between the ages 30 and 40 were consistently higher than those expected.

The mortality rates during the last three valuation periods are shown in the following table:—

Age Groups.	Mortality per 1,000 exposures.		
	1905-08.	1909-13.	1914-18.
16-20	2·80	1·89	2·49
21-25	2·63	2·49	3·20
26-30	2·50	2·88	2·56
31-35	3·91	3·58	3·50
36-40	4·52	4·21	4·36
41-45	6·14	6·15	5·46
46-50	8·66	8·49	8·07
51-55	12·39	11·52	11·22
56-60	20·25	17·19	17·89
61-65	31·98	29·02	28·81
66 and over	66·07	66·54	65·64
All ages.	7·27	6·64	7·39

The rates for 1914-18, which are exclusive of war mortality, do not differ materially in the individual age groups from those of the previous quinquennium.

The general rate for all ages is a little higher, but this was to be expected from the increase in the average age, mentioned above.

At 30th June, 1921, there were 59 Societies, including 22 Miscellaneous;

17 possessed branches, and 42, including 2 with juvenile branches, were classed as Single Societies. No new Societies were registered during the eighteen months ended 30 June, 1921.

The societies may be divided into two classes, viz., **Friendly Societies proper**, and **Miscellaneous Societies**, whose objects bring them within the scope of Friendly Societies' legislation, but whose benefits differ somewhat from those of ordinary Friendly Societies.

Among the amendments made to the Friendly Societies Act in 1920 it was provided that the annual returns should cover the financial year instead of the calendar year as formerly. In future, therefore, particulars of Friendly Societies will show as for the year ended 30th June, and the first return under the amended Act covered the eighteen months ended at 30th June, 1921:—

The following summary shows the branches, membership, and funds as at 30th June, 1921:—

Classification.						Societies and Branches.	Members.	Funds.
Friendly Societies Proper—						No.	No.	£
Affiliated ...	...	...	...	...	...	2,017	196,072	2,351,516
Single ...	...	...	...	...	...	22	3,616	60,246
						2,039	199,688	2,411,762
Miscellaneous Societies ...	...	...	...	...	...	22	846	20,889
Total ...						2,061	200,534	2,432,651

The societies classified as "Friendly Societies proper" offer such a wide range and appeal so strongly to individual sympathies that the field of operations for new societies is limited, and only one new Society has been established since 1913.

The number of members has grown rapidly since 1899, when Societies were first subjected to supervision by the Registrar. In that year there were 78,245 members, equal to 5·9 per cent. of the population, and thereafter a continuous development proceeded until the outbreak of war, when the number declined owing to enlistments and, subsequently, through deaths on active service. Each year since the termination of the war has shown an increase, however, and the results of the eighteen months ended 30th June, 1921, indicate a return to the progress of pre-war years. This growth and the decline during the war period are shown in the following table:—

Year.	Aggregate Membership.		Year.	Aggregate Membership.	
	Members.	Percentage of Population.		Members.	Percentage of Population.
1899	78,245	5·9	1916	178,877	9·4
1905	101,463	7·0	1917	177,602	9·3
1910	149,579	9·1	1918	180,896	9·3
1913	188,590	10·4	1919	184,174	9·2
1914	182,325	9·7	1921*	199,688	9·6
1915	178,705	9·4			

\* As at 30th June.

The number of members entitled to benefits at 30th June, 1921, was 183,344, the remainder being ineligible on account of brief membership or arrears of contributions. The benefits of medical attendance and medicine accrue also to the member's family, but such persons are not included in the membership.

The membership at 30th June, 1921, comprised 171,488 men, 13,423 women, and 14,777 juveniles. As compared with the membership at 31st December, 1919, there were increases of 9,612 men, 3,158 women, and 2,744 juveniles, the total net increase being 15,514 members. During each of the four years prior to 1918 there were decreases in the male membership attributable directly to the war.

Information regarding receipts and expenditure of Friendly Societies, and the accumulated assets, may be found upon reference to Part Private Finance of this Year Book.

#### *Miscellaneous Friendly Societies.*

In addition to the Friendly Societies proper there were at 30th June, 1921, twenty-two miscellaneous societies registered under the Friendly Societies Act. Eighteen were medical institutes or dispensaries which have no members in the ordinary sense of the term, but are supported by subscriptions from branches of Friendly Societies within their immediate districts, at a fixed rate per head of membership. The dispensaries supply medicine to all members whose names have been placed on their lists by contributing branches, and in some cases arrange also for medical attendance.

The receipts of the dispensaries during the eighteen months ended 30th June, 1921, were £30,247, and the expenditure was £58,247, so that there was an excess of receipts amounting to £2,000. These bodies have received liberal grants from the Government, and with this assistance have been able to purchase land and to erect buildings, the shares of the subscribing branches being covered by the issue of interest-bearing debentures; but in addition to making the necessary interest payments, most of the dispensaries have been enabled to make substantial reductions in the principal.

The following particulars regarding miscellaneous Friendly Societies relate to the eighteen months ended 30th June, 1921:—

Classification.			Dispensaries.	Other Miscellaneous Societies.	Total.
Societies	...	No.	18	4	22
Membership	...	No.	...	846	846
Receipts	...	£	60,247	4,845	65,092
Expenditure	...	£	58,247	4,802	63,049
Funds	...	£	18,003	2,886	20,889

It will be seen that dispensaries comprise over 80 per cent. of the Miscellaneous Societies, and by the amending Act of 1920 their scope was extended largely.

#### *State Subvention of Friendly Societies.*

To enlarge the sphere of usefulness of the Friendly Societies the Subvention to Friendly Societies Act, 1908, now consolidated with the Friendly Societies Act, assured to the societies which might elect to be bound by its provisions, the following monetary benefits payable from the Consolidated Revenue of the State:—

##### 1. Sicknes~~s~~ pay—

- (a) One half of the cost in each year in respect of continuous sickness after twelve months from the commencement of such sickness, for male members less than 65, and for females less than 60 years of age—provided that the maximum cost to the State must not exceed 5s. per week for each case.



- (3) The whole cost of sickness pay in respect of male members aged 65 years and over, and of female members aged 60 years and over—subject to the same proviso as above.

2. Amount equal to contributions payable—

- (a) On account of all male members 65 years and over, and of female members 60 years and over, for medicine and medical attendance, provided that such contributions shall not be more than those payable by members of the same society under the ages stated.
- (b) Under the rules of a society in respect of the aged members above mentioned, to assure payment of funeral allowance at their death.

With one exception, the Irish National Foresters, all affiliated societies have become applicants under the Act.

The following is a summary of the claims for the last five years for which information is available:—

Year.	Applicant Societies.	Sickness Pay.				Contributions.				Total Amount of Claims.
		Continuous Sickness.		Sickness of Aged Members.		Medical.		Funeral.		
		Claimant Members.	Amount.	Claimant Members.	Amount.	Claimants.	Amount.	Claimants.	Amount.	
1916	29	928	£ 5,012	1,852	£ 12,547	5,418	£ 7,219	5,487	£ 2,965	£ 27,743
1917	29	1,018	5,292	2,042	13,623	5,805	8,025	6,218	3,276	30,216
1918	29	1,105	5,564	2,165	14,238	6,318	8,835	6,986	3,553	32,190
1919	28	1,134	6,186	2,448	15,023	6,799	9,818	7,449	3,838	34,865
1921*	29	1,309	9,510	2,895	24,486	7,828	17,053	8,628	6,393	57,436

\* Eighteen months ended 30th June.

During the twelve years during which subvention has been payable the total claims have amounted to £309,946, details being as follows:—Continuous sickness pay, £53,338; sickness pay to aged members, £140,491; medical contributions, £31,529; and funeral fund contributions, £34,588.

The system has been of benefit to all the societies, but more particularly to those in which the proportion of aged members is large.

The following table shows the average annual weeks of sickness per member in New South Wales at every fifth year of age during the years 1900-08 in comparison with the experience of the Manchester Unity Friendly Society of England, 1893-7, the South Australian Friendly Societies, 1895-1904, and the Victorian Friendly Societies, 1903-7:—

Central Age.	New South Wales Friendly Societies, 1900-1908.	Manchester Unity, England, 1893-1897.	South Australian Friendly Societies, 1895-1904.	Victorian Friendly Societies, 1903-1907.
Years.				
18	·84	·95	·74	·91
23	·76	·90	·77	·86
28	·74	·97	·75	·85
33	·75	1·10	·79	·89
38	·84	1·33	·89	·99
43	1·02	1·65	1·04	1·20
48	1·32	2·11	1·32	1·46
53	1·85	2·98	1·80	2·10
58	2·94	4·41	2·84	3·82
63	4·63	7·15	4·44	6·56

The New South Wales experience approximates closely to that of South Australia, but is considerably below the experience of England and of Victoria.

The male rates decrease down to age 29, and then increase regularly to the end of the observed period of life. The phenomenon of high rates at the early ages is not explained on the ground of paucity of data, as the same result was exhibited in the experience of individual societies whether their membership was large or small. The sickness rates of the Friendly Societies of other States of the Commonwealth disclose a similar feature, and it must be concluded that such high rates are peculiar to this class of experience, and probably induced by the liberal benefits available.

### STATUS OF WOMEN.

In New South Wales women have had the right to exercise the franchise since 1902 and, in 1918, it was provided that sex should not disqualify any person from acting as member of the Legislative Assembly, as member of a council of any shire or municipality, as judge, magistrate, barrister, solicitor, or conveyancer. There is, however, no female member of the Legislative Assembly, though women have contested elections; a number of women have been appointed justices of the peace and one has been admitted to practice as a barrister. Women may not act on juries; they are eligible for all degrees at the University of Sydney, but are not ordained as ministers of religion.

The employment of women in factories and shops is regulated specially by the Factories and Shops Act, 1912, which limits the continuous employment of women to five hours, restricts the amount of work they may do in excess of forty-eight hours per week and between 6 p.m. and 6 a.m., and limits the employment of girls under 18 years of age. The minimum wage for any employee in a factory or shop is fixed at four shillings per week. A separate living wage for women employees is determined after special inquiry by the Board of Trade, but a definite principle of equality or difference between the pay of women and men is not observed in the industrial awards and agreements. There are only two separate trade-unions for women, but many unions have women members.

No legal age of marriage has been defined, but the average age at which women marry is about twenty-five years; the consent of a parent or guardian is necessary to validate the marriage of minors. The wife of a British subject is deemed to be a British subject throughout Australia. By the Married Women's Property Act, 1901, a married woman is capable of holding, acquiring, or disposing of any real or personal property as her separate property in the same manner as if she were a *femme sole*; her property is not liable for her husband's debts, and her earnings in any occupation apart from her husband's are her own. A wife, however, has no legal share of her husband's income or in any property acquired by their joint efforts after marriage, but a husband is liable for all necessary expenses of his wife and children.

### HOUSING.

The problem of housing has assumed considerable importance in New South Wales in the past decade. Fortunately in most country towns land is still comparatively cheap, and the inhabitants have generally been able to build adequate and hygienic dwellings, and, though close supervision of building was not inaugurated until 1919, these happy circumstances have prevented the growth of those State-wide evils which exist in some older countries. Nevertheless, in the city, in some of the large towns possessing an industrial population, and in mining centres, undesirable features have

been allowed to obtrude, so that not only unhealthy dwelling places, but, in parts of the Metropolis, "slum" areas have grown up.

In addition to the deep-seated causes, such as poverty, uncertainty of employment, and the lack of knowledge and supervision in past years, which have tended to produce the evils of bad housing, the shortage of houses has operated recently as a powerful force to cause overcrowding. This shortage has resulted from the restriction of building operations due to the rapid rise of costs, to the competition of other investments, and, latterly, to the partial suspension of operations during the war. Further reference is made to this matter under the heading of "House-rents" in Part "Food and Prices" of this Year Book.

Government action to deal with the matter of housing was first taken in 1911, when a Select Committee was appointed by the Legislative Assembly to inquire into the increase in rents. In the following year the State Housing Scheme was launched, and a Royal Commissioner was appointed to investigate the question of the "Housing of Workmen." The report of the Commission drew attention to some little-recognised evils, including the "slum" areas of the city, the poor housing of towns, the absence of town-planning, and the proper supervision of town-building. A number of the points raised by the Commissioner were met by the Local Government Act, 1919, which conferred very extensive powers on Municipal and Shire Councils, not only in supervising and regulating the construction of buildings, but in promoting schemes of town-planning on modern lines.

To assist Councils in their difficulties a Town Planning Advisory Board was appointed by proclamation of the Governor in October, 1918; and this Board is actively engaged with the problems of Metropolitan and country urban settlement. A Town Planning Association was formed in 1913 with the object of promoting legislation for the better laying-out of towns and of propagating knowledge of the advantages accruing from and the need for town-planning.

The number of occupied dwellings in New South Wales at each Census since 1861, together with the average number of occupants, is shown below:—

Census.	Occupied Dwellings.	Population.	Persons per Occupied Dwelling.	Census.	Occupied Dwellings.	Population.	Persons per Occupied Dwelling.
1861	64,571	348,950	5.40	1901	252,050	1,324,342	5.25
1871	93,690	501,579	5.35	1911	332,841	1,633,342	4.91
1881	135,326	748,241	5.53	1921	433,429	2,088,250	4.82
1891	215,940	1,101,987	5.10				

In Sydney improvements and resumptions have been continuous; 92 new buildings were erected during 1921 and 489 were altered or enlarged. In the suburbs the cottage plan of dwelling-house is favoured, and, as in the city, brick buildings predominate. During the past five years new buildings have been erected in the city and suburbs at an average rate of 6,223 per annum, which is low when compared with the pre-war average (1912-1914) of 8,740. Particulars of recent years are shown below:—

Year.	New Buildings.			Net Increase of Population, Sydney and Suburbs.
	Sydney.	Suburbs.	Total.	
1917	88	4,723	4,811	20,579
1918	76	4,878	4,954	24,913
1919	147	6,969	7,116	45,440
1920	143	8,524	8,667	31,660
1921	92	5,475	5,567	25,780

The extent of building operations, as shown by the records of past years, indicates an increase of dwelling-houses in New South Wales, but the major portion of that increase has been in suburban dwellings.

The following table shows the number of cases in which permission was granted to erect new buildings in municipalities outside the Metropolis during the twelve months ended 31st December, 1921:—

Municipality.	New Buildings (to erect which per- mission was granted).	Estimated Population, 31st December, 1921.
Auburn ... ..	147	14,220
Bankstown ... ..	247	11,480
Fairfield ... ..	67	5,480
Granville ... ..	112	13,780
Katoomba ... ..	58	9,180
Lidcombe ... ..	94	10,520
Lismore ... ..	83	8,810
Lithgow ... ..	87	12,940
Newcastle and Suburbs ...	773	88,640
Prospect and Sherwood ...	139	9,170
Wagga Wagga ... ..	54	7,730
Other Municipalities (123) ...	1,270	339,140
	3,131	531,090

Only those municipalities have been shown where permission was granted for the erection of fifty buildings or more; the other municipalities have been grouped.

As a result of the slackening of building operations during the war the shortage of houses, which had been felt already in 1914, was not relieved by construction, partly because the absence of so many men oversea created a weaker demand for houses, and partly because money and enterprise were diverted by the war. Consequently with the return of soldiers from abroad the demand for houses suddenly revived and the shortage was felt more acutely than ever. Though in response to the new demand the rate of building construction revived during 1919 and 1920, it did not exceed the pre-war rate and, largely as a result of the high costs and the scarcity and dearth of money, operations contracted in 1921 to little more than half their normal volume.

#### STATE HOUSING OPERATIONS.

In 1912, when the shortage of the smaller class of dwelling-houses was becoming acute in Sydney, the Government took steps to supplement the operations of private buildings by undertaking the construction of a Model Suburb in the South Randwick district.

In that year, the original Housing Act was passed, under which the control of the proposals was entrusted to a Housing Board consisting of three members, appointed by the Government; their term of office was for five years and they were not removable except by the Governor and for reasons laid down in the Act.

The Act authorised the Minister administering the Act, on the recommendation of the Board, to purchase and subdivide lands and to erect buildings for residential and other purposes and to sell or lease such buildings under certain conditions.

It constituted a separate fund for the purpose, to which appropriations made from time to time by Parliament could be carried.

By June, 1919, 314 houses had been constructed and let. In that year it was decided to enlarge the scope of the scheme considerably, and additional powers were given to the Board, enabling it to make advances to any adult person for the purpose of erecting or making additions to a house on lands already owned by him, or of purchasing a dwelling already erected. Such

advances, however, were confined to persons who were not already possessed of any land or dwelling-house exceeding £250 in value, and whose income did not exceed £400 per annum, and on the undertaking of the applicant that the cottage when erected would be occupied by him as a home for himself and his family.

The maximum amount of any advance was fixed by the Statute at £1,000, the Housing Board to advance not more than 95 per cent. of the value of any property. Although the Act provided for the purchase of premises, the limitation of funds placed at its disposal did not enable the Board to make any advances for the purchase of houses already erected, but in any case the housing activities were directed to providing homes to overcome the shortage of houses, and the Board felt that this would not be achieved by purchasing houses already built, and giving private individuals the profit on the transaction.

All loans are, under the Act, repayable on an instalment basis spread over a period of thirty years for brick, and twenty years for wooden buildings, with interest at current rate. The purchaser of any property under this scheme is not permitted to sell, mortgage, or let it before the expiration of seven years, unless the approval of the Board is obtained first.

Building Societies, whose objects include provision of houses for their members, may be assisted by grants or loans, but no business has so far transpired in this matter, owing to the Building Societies not being prepared to come to an agreement on the Government terms. The Act provided that the loan should be to the Building Society and not the individual.

The Act further provided that Shire Councils or Municipalities may be assisted similarly.

Up to the 30th June, 1921, as an outcome of the various operations, 1,159 houses had been constructed, and 164 were in course of erection at that date. Of these 810 were built upon Crown land and 513 on privately owned allotments. The total expenditure by the Board in all its operations to 30th June, 1921, was £898,447, exclusive of the cost of a number of sites partially developed but not valued. As all the land was either Crown land, or was owned by the persons to whom advances were made, there has been no expenditure by the Board in the purchase of land.

The following statement is a summary of the work of building done by the Board, from its inception to 30th June, 1921, and indicates the extent of its schemes:—

Site.	Area of Site.	Number of Dwellings.			Expenditure on Dwellings and Improvements on Land.	
		To be Erected.	Erected.	In course of Erection.	Completed.	Uncompleted
	acres.				£	£
Daceyville ...	210	1,287	314	...	184,068	...
„ No. 1 ...	16	102	63	...	45,714	...
„ No. 2 ...	48	284	63	2	73,287	308
Bunnerong ...	12	110	51	...	53,918	...
The Warren ...	12	80	61	...	61,360	...
Gladesville ...	23	134	18	88	42,180	43,141
Stockton... ..	72	400	59	...	35,872	...
Hamilton ...	5	29	29	...	21,883	...
Wollongong ...	1½	10	10	...	11,696	...
Forbes ...	2½	12	10	2	11,325	1,472
Auburn ...	2½	14	14	...	11,239	...
Matraville ...	14	85	8	10	12,798	1,667
Orange ...	1	8	8	...	6,672	...
Advances, private allotments ...	...	...	451	62	279,847	
All Sites...	419½	2,555	1,159	164	898,447	

During the year ended 30th June, 1921, 249 houses were completed, and 102 partially erected, involving an expenditure of £117,513 and £46,588 respectively, in addition to £1,268 spent on sites.

At Daceyville 72 houses were completed, Stockton 24, Bunnerong Village 26, The Warren, Marrickville, 46, Hamilton 6, Matraville, South Randwick, 6, Wollongong 10, Forbes 2, Gladesville 39, Auburn 14, and advances on private allotments amounted to £279,847.

The housing operations during the year were considerably restricted owing principally to a shortage of funds.

The original scheme provided for the construction of a garden suburb at Daceyville, about 5 miles from the centre of the city of Sydney. An area of Crown lands, covering 336 acres, and valued at £21,872, was appropriated and reservations were made for roads, parks, gardens, and other public places, also for public buildings, schools, and churches, the area allotted for various purposes being as follows:—Roads, 70 acres; parks and open spaces, 21½ acres; houses and shops, 169½ acres; public buildings and churches, 7 acres; public school, 5 acres; leaving an area of 63 acres yet to be dealt with. The total number of houses on the 274 acres will be 1,673, being an average of 6·65 to the acre, including roads, but excluding parks and open spaces. The main roadway is 100 feet wide, with secondary roads 66 feet wide.

Building operations were commenced on 6th June, 1912, and 314 cottages, six shops, a clinic, and a picture theatre had been completed at 30th June, 1920. The cottages are built of brick or concrete blocks, on stone or rubble foundations, with tile and slate roofs. The accommodation of the smallest dwellings is three rooms, and of the largest four rooms and kitchen. The cottages are lighted throughout with electricity, and gas is laid on for cooking purposes. The rentals range from 12s. 9d. to 21s. 6d., and the cost from £276 to £640, the average being £454 each, which includes building, kerbing and guttering, asphaltting footpaths, turfing, and sewerage connection.

The capital employed at 30th June, 1921, amounted to £187,267, of which £131,615 had been absorbed in cottages erected and in course of erection, £9,550 on shops and picture theatre, and the balance, £46,102, had been expended on the site in the construction of the storm-water channel, road formation, levelling, &c.

During the financial year 1920-21, the rentals contracted for amounted to £13,699, and the rents received to £13,552. At the end of the year the arrears of rent outstanding amounted to £147.

#### *Observatory Hill Resumed Area.*

The Observatory Hill Resumed Area is situated on the foreshores of Port Jackson, adjoining the wharves, and contains a number of business premises and residences, including dwellings, erected on the flat system, for waterside workers. The area comprises about 30 acres, and was acquired by the Government in 1900 in connection with the Darling Harbour wharves resumption. Being the oldest settled portion of Sydney, practically the whole of the area required improvement.

The capital employed amounted to £1,338,474 as at 30th June, 1921; the total revenue during the year 1920-21 was £72,633, and the expenditure £24,793, exclusive of interest on loan capital.

#### *State Savings Bank—Advances for Homes.*

As part of the Government scheme to provide facilities for house-building the Commissioners of the Government Savings Bank were authorised by an Act passed in 1913 to make advances to enable persons to erect or enlarge their homes or to purchase dwellings already constructed.

The Bank advances up to three-fourths of the value of the property to a maximum of £750, and the repayments in the case of new stone, concrete, or brick buildings are to be made within thirty years, and in the case of wooden structures within twenty years. No advance is made to any person who at the time of the application is the owner of another dwelling in the State.

The system came into operation on 1st July, 1914, and up to 30th June, 1921, the amount of £3,929,310 had been advanced to 9,139 borrowers. The transactions during each year were as follow:—

Year ended 30th June.	Applications received.		Advances made.	
	No.	Amount.	No.	Amount.
		£		£
1915	840	337,894	575	221,900
1916	928	333,490	794	298,375
1917	992	347,810	783	274,785
1918	1,567	573,870	875	311,710
1919	2,073	810,415	1,373	530,680
1920	1,945	1,304,465	2,250	1,009,500
1921	3,028	1,627,170	2,489	1,282,360

The average amount per advance was £515 in 1920-21. The scheme proved popular from its inception and, since the termination of the war, has become a most important factor in enabling persons of modest means to acquire a home on easy terms, to make additions and alterations, or to discharge an existing mortgage. In this way the operation of the scheme has provided facilities for improved housing.

The rate of interest charged for advances was raised from 5½ to 6 per cent. on 1st July, 1917. to 6½ per cent. from 1st July, 1920, and to 7 per cent. from 1st July, 1921.

#### *Sydney Municipal Housing Area.*

An Act was passed in 1912 to enable the Municipal Council of the City of Sydney to erect and let dwelling-houses, and for that purpose to acquire land.

A block of buildings named "Strickland Dwellings," erected by the Council on land acquired in Chippendale in connection with street improvements, was opened in April, 1914. The buildings are three storeys high, and cover a ground space of 279 feet by 78 feet; the total cost, including land, was £49,814. At each end there are four shops, and the remainder of the building is divided into 71 suites of self-contained flats of two, four, or six rooms; the rents range from 15s. 6d. to 35s. per week.

The City Council has by resumptions acquired other lands and buildings, and after street-widening retained many dwellings which by repairs and improvements of sanitary conditions have been converted into satisfactory residential areas.

#### WAR SERVICE HOMES.

The Commonwealth War Service Homes Act, 1918, which came into force in 1919, provides for homes for Australian sailors and soldiers and their female dependents. The Commissioner charged with the administration of the Act is authorised to acquire land and dwellings, and to erect dwellings, etc.; he may make advances on mortgage to eligible persons to enable them to acquire homes, or may sell homes to them on the rent-purchase system. The amount of advance on the total cost of land

and a dwelling may not exceed £800, and the maximum rate of interest for repayments is 5 per cent. Briefly, the position with regard to operations in New South Wales up to 30th June, 1921, was as follows:—

	No.
Houses completed .. .. .	1,735
Houses in course of construction .. .. .	532
Applications approved, but work not started ..	919
Existing houses purchased and mortgages discharged (settlement in every instance not yet effected) .. .. .	4,390

### PARKS, RECREATION RESERVES, AND COMMONS.

Excepting areas committed to special trustees, all public parks and recreation reserves in New South Wales are placed by the Local Government Act, 1919, under the control of Municipal and Shire Councils, whose authority extends over parks, children's playgrounds, drill grounds, sports grounds, and public gardens within their boundaries. On all areas, councils are empowered to provide buildings for public entertainments and refreshment rooms, boats and boat-sheds, pavilions, etc., public baths, gymnasia, and musical entertainments. Councils may also preserve places of historical and scientific interest and natural scenery. Most country towns of importance possess extensive parks and recreation reserves.

The city of Sydney contains within its boundaries a large extent of parks, squares, and public gardens. The most important are—Moore Park, where about 368 acres are available for public recreation, including the Sydney Cricket Ground and the Royal Agricultural Society's Ground; the Botanic Gardens and Garden Palace Grounds, 65 acres, with the adjoining Domain, 86 acres, ideally situated on the shores of the Harbour; and Hyde Park, 39 acres, in the centre of the city. The total area covered is 654 acres, or 20 per cent. of the whole of the city proper. This does not include the Centennial Park, 552 acres in extent, situated on the outskirts of the city, formerly reserved for the water supply, but now used for recreation by the inhabitants of Sydney. This magnificent recreation ground has been cleared, planted, and laid out with walks and drives, and is a favourite resort of the citizens.

The Zoological Gardens were situated in Moore Park until a new site was opened in 1916 at Taronga Park, on the northern side of the Harbour. In the preparation of the new gardens the natural formation has been retained as far as practicable, with the object of displaying the animals in natural surroundings.

The suburban municipalities are also well served, as they contain, including the Centennial Park, about 4,060 acres of public parks and reserves, or about 4.4 per cent. of their aggregate area, dedicated to, and in some cases purchased for, the people by the Government.

In addition to these parks and reserves, the National Park, situated about 16 miles south of Sydney, and accessible by railway, was dedicated to the people in December, 1879. This park, with the additions subsequently made in 1880 and 1883, contains a total area of 33,747 acres, surrounding the picturesque bay of Port Hacking, and extending in a southerly direction towards the mountainous district of Illawarra. It is covered with magnificent virgin forests; the scenery is charming, and its beauties attract thousands of visitors.



Another large tract of land, designated Kuring-gai Chase, was dedicated in December, 1894, for public use. The area of the Chase is 35,322 acres, and contains portions of the parishes of Broken Bay, Cowan, Gordon, and South Colah. This park lies about 15 miles north of Sydney, and is accessible by railway at various points, or by water *via* the Hawkesbury River, several of whose creeks, notably Cowan Creek, intersect it.

In 1905 an area of 248 acres was proclaimed as a recreation ground at Kurnell, on the southern headland of Botany Bay, a spot famous as the landing-place of Captain Cook; and the Parramatta Park (252 acres) although outside the Metropolis, may be mentioned on account of its historic interest.

Under the Public Parks Act the Governor may appoint trustees of any lands proclaimed for the purposes of public recreation, convenience, health, or enjoyment. The trustees are empowered to frame by-laws for the protection of shrubs, trees, etc., upon the land vested in them, and to regulate the use and enjoyment of such land by the public.

Surrounding many country towns there exist considerable areas of land reserved as commons, on which such stock as is possessed by the townsfolk may be depastured. The use of these lands is regulated by local authorities; nominal fees are usually charged to defray the cost of supervision and maintenance. Many of these commons have been made permanent, but a large number are only temporary.

Particulars as to the areas reserved for parks and recreation reserves and for temporary commons at 30th June, 1910, 1920, and 1921 are shown below.

As at 30th June.	Temporary Commons.	Parks and Recreation Reserves.
	acres.	acres.
1910	579,033	207,908
1920	461,529	230,857
1921	467,554	228,169

As at 30th June, 1922, 37,445 acres of permanent commons, including 4,259 acres in the Western Division, had been reserved.

### EXPENDITURE ON ENTERTAINMENTS.

The imposition by the Commonwealth Government of an entertainments tax provides a means whereby the "amusement bill" of the community can be estimated to some extent. The rates of tax are one half-penny for admission to a continuous place of entertainment for persons apparently over the age of 16 years where the payment for admission (exclusive of tax) is five pence; one half-penny where the charge for admission to an entertainment is six-pence; one penny if the charge exceeds six-pence, and is not more than one shilling; and one penny for the first shilling and one half-penny for every additional six-pence, or part of six-pence, when the charge exceeds one shilling. As will be seen from the tables which follow, the people of New South Wales paid £3,228,758, or 30s. 11d. per head, during the year ended 30th June, 1921, for admission to taxable entertainments. This is exclusive of 119 entertainments given to children under 12 years of age on

Saturday afternoons, at a charge of three-pence each, which paid no tax, and of which no record was kept of attendances or payments for admissions. In addition, 8,286 entertainments for patriotic, religious, philanthropic, and educational purposes were exempted from taxation, making a total of 8,405 entertainments, of which there are no records of admissions or takings.

The number of entertainments during the year on which taxes were paid is shown hereunder:—

Class of Entertainment.	Metropolis.	Suburbs.	Country.	Total.
Racing... ..	...	165	920	1,085
Theatrical ... ..	3,456	1,947	3,280	8,683
Picture Shows ...	6,692	27,050	31,789	65,531
Dancing and Skating	1,920	7,821	7,549	17,290
Concerts ... ..	1,262	282	787	2,331
Miscellaneous... ..	1,146	3,013	8,359	12,518
Total ... ..	14,476	40,278	52,684	107,438

The following table shows the number of persons admitted, the amount of tax collected, and amount paid for admission. Of the amount paid for admission £2,123,707 was contributed by persons who paid from 6d. to 3s. 6d., £681,709 by those who paid 4s. to 10s. 6d., and £423,342 by those who paid from 11s. to 210s. The most popular entertainments would seem to be those at which the charge for admission is one shilling, the attendances being 11,929,245, and the amount paid £596,462:—

Class of Entertainment.	Number of Admissions.	Tax Collected.	Payments for Admission.
Race Meetings—		£	£
Suburban ... ..	2,455,720	41,379	575,997
Country ... ..	820,092	13,346	131,621
Theatres—			
City ... ..	2,714,962	41,975	523,151
Suburban ... ..	1,031,729	5,235	62,574
Country ... ..	799,111	6,014	72,021
Picture Shows—			
City ... ..	7,822,110	38,220	411,105
Suburban ... ..	11,571,082	47,533	483,875
Country ... ..	8,785,739	37,094	418,359
Dancing and Skating—			
City ... ..	253,446	2,491	35,261
Suburban ... ..	703,664	4,628	55,821
Country ... ..	537,980	3,338	40,612
Concerts—			
City ... ..	146,485	2,465	31,740
Suburban ... ..	54,486	341	4,088
Country ... ..	151,227	1,146	13,760
Miscellaneous—			
City ... ..	768,209	8,176	106,813
Suburban ... ..	1,338,422	8,557	104,101
Country ... ..	1,506,699	8,850	107,859
Total ... ..	41,461,163	£270,788	£3,228,758

From the foregoing table the following summary has been compiled, showing the total admission tax collected and payments for admission, and the amounts per head of population in the Metropolis and Country:—

Location of Entertainments.			Number of Admissions.	Tax Collected.	Payments for Admission.
				£	£
Metropolis	...	...	28,860,315	201,000	2,394,526
Country	...	...	12,690,848	69,788	834,232
Total	...	...	41,461,163	£270,788	£3,228,758
Per Head of Population.					
				£ s. d.	£ s. d.
Metropolis	...	...	32·0	0 4 6	2 13 2
Country	...	...	10·6	0 1 2	0 14 0
Total	...	...	19·8	£0 2 7	£1 10 11

It will be seen that, on the average, dwellers in the Metropolitan area attend a place of entertainment three times as often as country people, and spend nearly four times as much in charges for admission.

#### HORSE-RACING.

Horse-racing has always been a popular form of sport in New South Wales, and with it is associated a large amount of betting. The pastime includes pony-racing and trotting races. A considerable number of race-courses exist in and around the Metropolis and Newcastle; most country towns of importance possess a race-course, and in many country centres there have been formed Picnic Race Clubs which hold race meetings on a more or less improvised track. A number of racing clubs are conducted for profit, but many have only social objects and devote large sums to charity.

The conduct of race meetings is regulated largely by district associations, with which most clubs are affiliated. A certain amount of Government control is also exercised through the Gaming and Betting Act, 1912. This Act requires race-courses to be licensed annually, fixes the minimum circumference of running grounds at six furlongs, determines the frequency with which, and the days on which, races may be held, and limits the number of licensed race-courses in the Metropolitan and Newcastle districts to the number existing in 1906. Betting or wagering is prohibited on any ground except a licensed race-course or coursing ground on which horse-races, pony-races, trotting races, or coursing are being held.

Some idea of the extent of racing and betting may be obtained from licensing and taxation returns. During the year 1921 taxes were paid by 463 racing clubs, most of which were affiliated with one of the ten racing associations. The number of separate racecourses licensed was 465, and 587 licenses were issued for race meetings held thereon. It was estimated that approximately 1,500 bookmakers were operating during the year ended June, 1921; and 15,171,580 betting tickets were issued. During the six months, January to June, 1921, there were 446,559 credit bets recorded. These figures do not include totalisator tickets. For the year 1921 race meetings were arranged for 181 separate days in the Metropolitan and Newcastle districts.

#### THEATRES AND PUBLIC HALLS.

All buildings in New South Wales, in which public meetings (excluding meetings for religious worship) or public entertainments are held, must be licensed under the Theatres and Public Halls Act, 1908. A license may be

refused if proper provision is not made for public safety, health, and convenience, and if the site or building is unsuitable for the purpose of public meeting or entertainment. Licenses are granted for a period of one year, and premises are subjected to inspection before renewal of the license; plans of buildings intended to be used for theatres and public halls must be approved before erection is begun. A license or renewal of a license may be withheld until such alterations or improvements as may be deemed necessary are carried out.

As at 31st December, 1921, there were 1,856 buildings to which the provisions of the Act applied, and these buildings provided seating accommodation for approximately 851,000 persons. The total amount of fees received for licenses was £3,140.

### REGULATION OF LIQUOR TRADE.

The sale of intoxicating liquor in New South Wales engaged the attention of successive Governors and became one of the first subjects of legislation when civil government was established. The first Liquor Act—that of 1825—aimed, through the introduction of a system of licenses, at ensuring that hotelkeepers should be of good character, and at securing a certain amount of revenue.

Since that date the liquor laws of the State have been amended frequently, and development has favoured more restriction and closer regulation of the trade. The hours of liquor trading have been curtailed considerably. In 1862 they were limited to those between 4 a.m. and midnight, in 1881 to those between 6 a.m. and 11 p.m., and after a referendum in 1916 the hour of closing was fixed at 6 p.m., during the period of the war and for six months thereafter. Six o'clock closing is still in operation, as it was extended under the Liquor Amendment Act of 1919 pending a referendum.

After many years of agitation an instalment of the principle of local option was embodied in the Liquor Act of 1881, and in 1907 the system was extended to its present scope, as explained below.

The liquor laws of the State were consolidated into the Liquor Act, 1912, which, with five amendments, at present regulate the trade. All places in which intoxicating liquor is sold, and all persons who sell it must be licensed, and supervision is exercised over the conduct of licensed premises by the police, who also watch cases in the Licensing Courts. A Licensing Court is constituted in the Metropolitan district by three Stipendiary Magistrates, in country districts by the local Police Magistrate (or a special Licensing Magistrate) and two Justices of the Peace, specially appointed.

The Liquor Amendment Act, 1919, provided that no new publicans' or wine licenses may be issued after 1st January, 1920, except on the grounds of increase of population, and then only on the application of a majority of the adult residents living within a radius of 1 mile of the premises for which a license is sought.

The following table gives particulars respecting the number of hotels in the State, and the average population to each:—

Year.	Licenses issued.	Average Population to each Hotel.	Year.	Licenses issued.	Average Population to each Hotel.
1890	3,428	321	1910	2,865	564
1895	3,238	386	1915	2,640	716
1900	3,163	428	1920	2,517	822
1905	3,063	475	1921	2,488	847

The annual fee for a Publican's license is regulated by the annual assessed value of the hotel. During the year 1921 an amount of £98,952 was collected on account of such licenses.

The Liquor Act which regulates the issue of hotel licenses provides also for the issue of "Additional Bar" licenses where liquor is sold in more than one room in the licensed premises, and of booth or stand licenses for places of public amusement for a period not exceeding seven days.

Licenses are allowed for the sale of liquor in approved club premises, and packet licenses to masters of steamers engaged in the coastal trade of the State.

Colonial Wine, Cider, and Perry licenses are held chiefly by grocers and keepers of restaurants, oyster saloons, and wine and fruit shops; the liquor sold must be the produce of fruit grown in Australasia, and the quantity sold at one time must not exceed 2 gallons.

Holders of Spirit Merchants' licenses are not permitted to sell a quantity less than 2 gallons of liquor of the same kind at one time. Railway Refreshment Room licenses are issued under Executive authority and not by Magistrates.

The following statement shows the number of licenses for the sale of intoxicating liquor issued during 1921:—

License.	Annual Fee.	Number of Licenses.	Fees Collected.
	£		£
Publicans' ... ..	Regulated by assessed value.	2,488	98,952
Additional Bar ... ..	20	153	2,891
Club ... ..	£5 and upwards.	78	1,123
Packet ... ..	3-15	13	130
Booth or Stand ... ..	2*	2,337	4,674
Colonial Wine, Cider, and Perry ...	3	450	1,350
Brewers' ... ..	20-30	17	360
Spirit Merchants' ... ..	20-30	244	5,690
Railway Refreshment Room ...	30	29	870

\* For period of issue not exceeding seven days.

#### *Local Option.*

The principle of local option is that questions of increasing, reducing, or abolishing licenses for the sale of intoxicating liquors in any district should be determined by vote of the residents in that district. Between 1882 and 1907 such questions were submitted, as regards municipalities only, to the vote of ratepayers, and the extension of the right to vote to women was hotly debated. In 1902 women were enfranchised; and the Liquor Amendment Act of 1905 provided that a local option vote, as regards electorates, should be taken at parliamentary elections, all qualified electors having the right to vote. Particulars as to the nature of the proposals submitted to the electors and the result of the voting are shown in previous issues of this Year Book.

When the first local option vote was taken in September, 1907, there were 3,023 hotels in existence; of this number it was ordered that 293 be closed at dates varying from 10th September, 1908, to 31st December, 1913. At the second local option vote on 14th October, 1910, there were 2,869 hotels, and as a result of the vote the closing of 28 was ordered. On the day of the election, 6th December, 1913, there were in existence 2,719 hotels, of which 23 were ordered to close at a fixed date. The licenses in force at 27th April, 1922, numbered 2,443.

The number of Wine licenses in operation at the time of the vote of 1907 was 633, of which 46 were abolished. In 1910, of the 565 licenses in existence, closing orders were made in 5 cases; in 1913, in respect of the 514 existing, 7 closing orders were made.

Spirit Merchants' and Brewers' licenses are not affected by the operation of the local option vote.

The Liquor Act of 1912 provides that a local option vote must be taken at each general election of the State Parliament, unless the election be held within eighteen months of the previous polling day. This provision was suspended by the Liquor Amendment Acts of 1916 and 1919, and the local option vote was not taken at the general elections held in 1917 and 1920.

#### *Reduction of Licenses.*

The number of hotels licensed in New South Wales has been decreasing steadily for more than thirty years, and the further reduction of licenses was provided by the Liquor (Amendment) Act, 1919, when a License Reduction Board was appointed which might operate to reduce licenses to a statutory number fixed as follows:—

- (a) In the case of an electorate for which five members are returned to the Legislative Assembly, one for each 250 of the first thousand electors on the electoral roll, and a further three for each subsequent two thousand, and
- (b) In an electorate for which three members are returned, one for each 250 of the first thousand electors, and a further one for each subsequent 500:

Provided that the licenses in any electorate may not be reduced by more than one-fourth of the existing number.

The Board is also empowered to fix compensation fees payable by licensees of premises whose licenses are not withdrawn, and to assess the amount of compensation payable in cases where licenses are withdrawn.

Compensation is made from the Compensation Fund into which compensation fees collected from licensees are paid. The fee payable by each licensee in any year is an amount equal to 3 per cent. of the sum expended by him in the purchase of liquor during the preceding year.

From the 1st January, 1920, to 27th April, 1922, 100 licenses were cancelled, as shown in the following table:—

Electorate.	Licenses cancelled.	Compensation awarded.	Electorate.	Licenses cancelled.	Compensation awarded.
		£			£
Sydney ...	20	45,650	Maitland ...	2	2,830
Newcastle ...	23	29,470	Murrumbidgee ...	1	450
Bathurst ...	17	23,180	Byron ...	1	1,080
Murray ...	27	37,580	Oxley ...	1	Not yet fixed.
Sturt ...	8	2,760			
				100	143,000

Of these 100 hotels, 59 had actually closed and 41 were to close at 27th April, 1922. In addition 39 hotels closed other than by the Board's action.

The amount of fees paid by licensees into the Compensation Fund during the year 1920 was £163,965, and during the year 1921 it was £207,799, and the balance in the fund on 31st May, 1922, was £294,156.

#### *Prohibition.*

The Liquor Amendment Act of 1919 provided for a referendum to be taken before 23rd June, 1921, on two questions, viz., prohibition with compensation, and the closing hour of licensed premises and registered clubs; but the referendum was not taken, mainly on account of the expense which a vote in favour of prohibition would entail.

A Compensation Assessment Board was appointed to determine the amount of compensation payable in the event of prohibition being carried. The amount involved, as determined at the beginning of 1921, was £12,116,479, exclusive of any payments to employees under provisions of the Act.

## OCCUPATIONAL LICENSES.

Partly as a means of raising revenue and partly as a means of ensuring a certain amount of supervision over persons who follow callings which bring them into contact with the general public or which are carried on under special conditions, licenses must be obtained by auctioneers, pawnbrokers, hawkers, pedlars, collectors, second-hand dealers, and persons who conduct billiard and bagatelle tables or engage in Sunday trading.

The fee for billiard and bagatelle licenses is £10 per annum, and during 1921 there were 781 in force, the total fees collected being £7,615.

Auctioneers' licenses are divided into two classes, viz., General and District. The annual fee for a general license is £15, and for a district £2, and provision is made for a *pro rata* payment for licenses issued after the commencement of the year. There were 391 of the former and 2,132 of the latter current in 1921, the fees received being £9,345. General licenses are available for all parts of the State; district licenses only cover the Police district for which they are issued, but they are not issued for the Metropolitan district. Sales by auction are illegal after sunset or before sunrise, except in the Municipality of Albury, where, under the Auctioneers' Licensing (Amendment) Act, 1915, wool may be put up to sale or sold after sunset.

In 1921 there were 102 Pawnbrokers' licenses current in New South Wales, for each of which an annual fee of £10 is payable. The hours for receiving pledges by pawnbrokers are limited, with certain exceptions, to between 8 a.m. and 6 p.m., but no restriction is placed on the rate of interest charged.

The annual license fee for a hawker trading on foot is £1, and if with pack animals or vehicles the charge is £2; the total amount of fees received during 1921 was £2,065.

The fee for a Collectors' license is 1s., Second-hand Dealer £1, Sunday Trading 5s., ordinary gun 5s., gun dealers £1, but Special Gun licenses are issued free.

The following table shows the principal licenses issued in the last six years:—

License.	1916.	1917.	1918.	1919.	1920.	1921.
Publicans' ... ..	2,617	2,589	2,578	2,557	2,517	2,488
Additional Bar ... ..	132	136	134	143	125	153
Club ... ..	76	73	77	78	76	78
Railway Refreshment ... ..	27	27	28	29	29	29
Booth or Stand ... ..	1,816	1,574	1,273	1,542	1,959	2,337
Packet ... ..	21	17	18	15	13	13
Colonial Wine, Cider, and Perry	487	403	458	467	443	450
Spirit Merchants' ... ..	193	179	194	199	217	244
Brewers' ... ..	24	23	19	16	17	17
Auctioneers'—General ... ..	303	287	344	344	391	391
District ... ..	1,683	1,745	1,909	1,995	2,200	2,132
Billiard and Bagatelle ... ..	838	733	785	763	815	781
Tobacco ... ..	13,179	13,089	13,308	14,141	14,391	15,488
Pawnbrokers' ... ..	99	102	100	102	95	102
Hawkers' and Pedlars' ... ..	1,178	1,149	1,224	1,479	1,440	1,951
Collectors' ... ..	1,852	2,092	2,354	2,207	2,126	2,136
Second-hand Dealers' ... ..	946	993	1,216	1,247	1,421	1,475
Stage Carriage ... ..	222	193	153	212	139	123
Sunday Trading ... ..	4,604	4,826	5,825	6,014	6,381	6,985
Gun Licenses (ordinary) ... ..	...	...	...	...	...	64,682
"          " (special) ... ..	...	...	...	...	...	36,961
Gun Dealers ... ..	...	...	...	...	...	684

## FOOD AND PRICES.

ALTHOUGH New South Wales is not entirely independent of external sources of food supply, the articles which enter most largely into daily consumption—meat, bread, milk and butter—are all produced within the State in sufficient quantity to meet local demands, and to leave a surplus for export.

### CONSUMPTION OF FOOD.

On the 13th September, 1910, the system of keeping records of interstate trade ceased, so that it became difficult to determine accurately the quantity of commodities consumed within the State. In view, however, of the special interest attached to the question of food consumption, particularly in relation to the cost of living, efforts have been made since 1916 to obtain the needed information from other sources, and in spite of the absence of official records of interstate trade, the following estimates are published with a large degree of confidence as indicative of the consumption of the more important articles of diet during the year 1921.

In order to show the changes of regimen during the last 20 years, similar information is shown for the years 1901 and 1911; in regard to the latter year it has been assumed that the consumption of all the commodities except meat was the same as in the three years, 1907–09, and the quotations for 1921 relate to the year ended 30th June :—

Commodity.	Unit.	Consumption per head per annum.			Commodity.	Unit.	Consumption per head per annum.		
		1901.	1911.	1921.			1901.	1911.	1921.
Meat—Beef .. ..	lb.	134·4	150·9	94·0	Bread .. ..	2-lb. loaves	105·0	102·0	99·0
Mutton .. ..	lb.	90·7	101·3	66·1	Rice .. ..	lb.	9·7	8·2	4·9
Pork .. ..	lb.	4·6	5·0	2·3	Sago and Tapioca ..	lb.	1·9	2·0	1·8
Bacon and Ham ..	lb.	9·0	10·7	8·4	Oatmeal .. ..	lb.	7·0	7·6	4·9
Total Meat ..	lb.	238·7	267·9	170·8	Sugar .. ..	lb.	107·8	103·8	102·3
Fish—Fresh & Smoked ..	lb.	4·8	6·4	10·9	Jam .. ..	lb.	14·2	15·7	12·1
Preserved .. ..	lb.	4·7	4·3	2·9	Butter .. ..	lb.	19·6	26·1	27·8
Total Fish ..	lb.	9·5	10·7	13·8	Cheese .. ..	lb.	3·7	3·5	3·4
Potatoes .. ..	lb.	197·7	181·0	104·9	Milk—Fresh .. ..	gal.	16·4	17·4	19·6
Flour .. ..	lb.	244·4	228·4	211·4	Preserved ..	lb.	3·5	4·4	5·9
					Tea .. ..	lb.	7·9	7·3	8·0
					Coffee .. ..	oz.	13·3	11·0	10·9

From the above table it will be seen that there has been a marked decline in the consumption of some leading articles of diet; and that decline has not been accompanied apparently by a corresponding increase in respect of other articles. In estimating the consumption of such commodities as potatoes, butter, and fresh milk, the quantities produced on holdings which are less than one acre in extent have not been taken into account, as particulars relating to such small areas are not collected; the consumption of potatoes excludes also the quantity used for seed. The consumption of fresh fish, as estimated above, is exclusive of the catches of private fishermen, and of a proportion of the fish caught by licensed fishermen and sold to consumers in the immediate vicinity of the fishing grounds.

The figures relating to the consumption of sugar include the sugar contents of golden syrup and treacle.

In comparison with 1901 there were decreases per head in the annual consumption of the following important articles of diet :—Meat 67·9 lb., potatoes 92·8 lb., flour 33 lb., bread 12 lb., jam 2·1 lb., rice 4·8 lb., oatmeal 2·1 lb., sugar 5·5 lb. There were increases in butter 8·2 lb., fish 4·3 lb., fresh milk



3·2 gallons, and preserved milk 2·4 lb. As approximately one-third of the meat sold for consumption is bone and waste, the actual decrease in consumption would be about 45 lb., but there is little doubt that more economy is exercised now in the use of meat than in earlier years when its great cheapness caused a wasteful consumption.

### *Meat.*

The following statement shows the average annual consumption per head of the various kinds of meat, in each year since 1901 :—

Year.	Beef and Veal.	Mutton and Lamb.	Pork.	Bacon and Ham.	Total.
	lb.	lb.	lb.	lb.	lb.
1901	134·4	90·7	4·6	9·0	238·7
1902	122·1	99·2	3·8	7·7	232·8
1903	112·4	90·3	4·1	6·2	213·0
1904	127·6	73·3	3·9	8·1	212·9
1905	133·5	82·2	4·6	9·7	230·0
1906	140·5	89·8	4·2	9·2	243·7
1907	145·7	91·6	3·7	8·3	249·3
1908	141·1	96·3	3·5	7·4	248·3
1909	147·6	101·4	2·8	7·5	259·3
1910	145·3	100·0	5·9	9·1	260·3
1911	150·9	101·3	5·0	10·7	267·9
1912	165·0	90·7	6·2	11·1	273·0
1913	151·8	93·4	3·8	9·7	258·7
1914-15	120·5	78·0	3·0	9·3	210·8
1915-16	97·5	72·2	2·0	7·9	179·6
1916-17	93·6	68·8	3·5	9·5	175·4
1917-18	83·9	61·7	3·9	10·0	159·5
1918-19	80·0	66·7	6·3	8·3	161·3
1919-20	90·9	68·1	2·7	8·6	170·3
1920-21	94·0	66·1	2·3	8·4	170·8

The quantity of meat consumed is still large, though it has declined considerably. The consumption declined in each year from 1901 to 1904 ; in 1905 it increased and the upward movement continued until in 1912 the average quantity amounted to 273 lb. per head. Then it decreased rapidly until in 1915-16 it was less than two-thirds of the consumption in 1912, the decrease being general in all kinds of meat. The decline continued, though at a slower rate, during the succeeding two years, and in 1917-18 the average consumption was only 159·5 lb. per head, or 113·5 lb. below the average in 1912. In 1918-19 there was a slight increase, and during the following year there was a further increase. In 1920-21 the quantity of meat consumed was about the same as in the previous year, an increase of 3 lb. per head in the consumption of beef being offset by a decrease of 2 lb. per head in regard to mutton, and a slightly lower consumption of pork and bacon.

As a general rule, fluctuations in the average consumption are the result of variations in prices. Thus a rise in prices in 1902, on account of drought, was followed by a marked decline in consumption, but when prices fell the consumption did not increase immediately as the effects of the drought had reduced the spending capacity of the people.

During the prosperous years, 1909 to 1912, variations in prices did not greatly affect the consumption, but in 1913 and following years the average quantity consumed decreased in each year as the price increased. In 1918-19 the prices dropped by about 6 per cent., and the consumption increased slightly. In the following year the price rose by 9 per cent.; nevertheless there was an increase of nearly 4 per cent. in the consumption, which may be attributed to increases in wages in consequence of a rise of 17s. per week in the living wage declared in October, 1919. It is noticeable that

the increase was in the consumption of beef, to which preference is generally given in periods of prosperity. In 1920-21 the annual average of the retail prices of meat showed little variation when compared with the average of the previous year; but an investigation of the movement of the prices during each month of the year showed that between September, 1920, when they were at a maximum, and June, 1921, there was a decline of over one-third, and the general level of prices was lower in the latter months than at any time during the previous six years.

The following statement shows the variations in the average consumption, and in the levels of the average retail prices of meat (including bacon), since 1901, the figure for that year being taken as 100 in each case :—

Year.	Average Annual Consumption. of meat.	Retail Prices. of meat.	Year.	Average Annual Consumption. of meat.	Retail Prices. of meat.
1901	100	100	1911	112	101
1902	98	123	1912	114	113
1903	89	115	1913	108	117
1904	89	106	1914-15	88	150
1905	96	100	1915-16	75	223
1906	102	101	1916-17	73	227
1907	104	104	1917-18	67	238
1908	104	110	1918-19	68	223
1909	109	102	1919-20	71	242
1910	109	100	1920-21	72	248

The decline in the consumption of meat has not apparently been counter-balanced by an increase in the consumption of fish, which as a food is inferior in every respect. The quantity of fish consumed represented 13·8 lb. per head in 1921, viz., fresh and smoked 10·9 lb., and preserved 2·9 lb. As regards the former there has been an increase of 6·1 lb. since 1901, while the latter shows a decrease of 1·8 lb. which may be attributed to a rise in price.

It is, however, very probable that a growing consumption of rabbits has partially replaced the decline in the consumption of meat. The local consumption of this type of food is difficult to ascertain, but is estimated to be now from 60,000 to 80,000 pairs per week, which is much greater than in the early years under review.

It is probable also that the diminution in the consumption of meat has been made good partially by an increased consumption of eggs. The number of eggs, however, used as food, either directly or as ingredients in cakes, pastry, puddings, etc., cannot be ascertained accurately.

#### *Potatoes.*

The consumption of potatoes decreased from 197·7 lb. in 1901 and 181 lb. in 1911 per head to 104·9 lb. in 1921. Of the commodities shown in the table, potatoes are subject to the greatest fluctuations as to supply and price, and the consumption varies accordingly. In 1901 the average price for 14 lb. was 11¼d., in 1911 it was 12¼d., in 1920 it was 2s. 2½d., and in the following year 1s. 4½d. Local production is not equal to the demand, and it has declined greatly, so that it is necessary to import large supplies from the neighbouring States.

#### *Bread and Flour.*

The average consumption of bread in 1920 was estimated to have been 99 loaves (2 lb.) per head, and recent inquiries indicate that there has not been an appreciable change in regard to the quantity consumed. It is the opinion of those in the trade that the introduction of day-baking in the middle of 1914 caused a reduction of 10 per cent. in the consumption

of bread, as a result of the comparative staleness of the loaf baked on the day preceding delivery. Subsequently, owing to an adjustment of the hours of baking, it became the practice to deliver the bread on the day it is baked, in order to satisfy the popular demand for hot bread, and the consumption increased.

Such food commodities as potatoes and bread were of greater importance in the usual family dietary in early years than at the present time, when a variety of vegetables and other foods is obtainable readily. It is estimated that the consumption per head of bread in 1901 was 105 loaves, in 1911 it was 102 loaves, and in 1916 it was 96 loaves.

The consumption of flour is stated at 211·4 lb. per head. The quantity includes approximately 155,500 tons (149 lb. per head) used for bread, and 12,210 tons (11·7 lb. per head) used in biscuit factories, but the quantity used by pastrycooks is not available. Exclusive of the quantity used for bread, biscuits, etc., it is estimated that the average household consumption of flour by a family of five persons is about 4 lb. per week, or 42 lb. per head per annum.

#### *Oatmeal, Rice, and Sago.*

The consumption of oatmeal rose slightly from 7 lb. per head in 1901 to 7·6 lb. in 1911, but it has declined since to 4·9 lb., probably on account of an increased consumption of other breakfast foods. The consumption of sago and tapioca shows but slight alteration, and the quantity of rice has decreased from 9·7 lb. to 4·9 lb. per head. Supplies of rice are obtained by importation; it was scarce and dear during 1920-21.

#### *Sugar.*

The quantity of sugar consumed—102·3 lb. per head—appears high, though it was 107·8 lb. or 5·5 lb. higher in 1901. In computing the average it is not possible to allow for the quantities used in the manufacture of products such as jam, of which the exportation has increased greatly, having risen from 700,000 lb. per annum during the period 1899-1901 to nearly 15,000,000 lb. in the three years ended June, 1921. The records of the manufacturing industry in 1920-21 show that 7,459 tons of sugar (8 lb. per head) were used for jam and canned fruit; 3,024 tons (3·3 lb. per head) for biscuits; 2,454 tons (2·6 lb. per head) in condensed milk factories; 5,477 tons (5·9 lb. per head) in breweries; 2,797 tons (3 lb. per head) in aerated water factories; 8,155 tons (8·7 lb. per head) in making confectionery; and 1,023 tons (1·1 lb. per head) in making condiments, pickles, sauces, etc.

The average household consumption of sugar is estimated at 6 lb. per week for a family of five persons, or 62 lb. per head per annum.

#### *Butter, Cheese, and Milk.*

Butter is an important item of food in New South Wales, and the consumption increased from 19·6 lb. per head in 1901 to 26 lb. in 1911, and to 27·8 lb. in 1921. During the last three years the production of butter in New South Wales amounted, on the average, to over 71,000,000 lb. per annum, which was more than sufficient to supply the local demand, and a considerable quantity was exported.

The quantity of cheese consumed has not varied greatly, but the quantity of fresh milk has increased from 16·4 gallons to 19·6 gallons per head, and of condensed milk from 3·5 lb. to 5·9 lb.

#### *Tea and Coffee.*

Tea enters largely into consumption amongst all classes, the average annual consumption being 8 lb. per head. Of coffee, on the other hand, the average was less than 11 oz. per head. The consumption per head of those beverages has not varied materially.

## CONSUMPTION OF INTOXICANTS.

The figures relating to local consumption of alcoholic beverages in years later than 1909 were not published until the issue of the Year Book for 1916, when arrangements were made to obtain information from spirit merchants to allow reliable estimates to be made. The annual consumption in various years since 1901 is estimated to have been as follows:—

Year.	Aggregate Consumption of Spirits.			Per Head of Population.		
	Australian.	Foreign.	Total.	Australian.	Foreign.	Total.
	proof gallons.	proof gallons.	proof gallons.	proof gallons.	proof gallons.	proof gallons.
1901	12,400	1,233,300	1,245,700	·01	·89	·90
1904	120,300	1,006,100	1,126,400	·08	·70	·78
1907	224,100	1,207,200	1,431,300	·15	·79	·94
1910	165,200	1,211,100	1,376,300	·10	·75	·85
1913	285,600	1,449,300	1,734,900	·16	·79	·95
1916-17	433,500	849,700	1,283,200	·23	·45	·68
1917-18	420,400	669,000	1,089,400	·22	·35	·57
1918-19	290,700	451,700	742,400	·15	·23	·38
1919-20	482,600	554,900	1,037,500	·24	·27	·51
1920-21	451,100	456,500	907,600	·22	·21	·43

It should be noted that the figures show the proof alcoholic contents of the beverages sold as spirits; the actual quantities sold would be at least 25 per cent. greater; whisky and brandy of the best quality are retailed usually at about 23·5 per cent. under proof, and gin and rum at about 30 per cent. under proof. The standards under the Pure Food Act are whisky and brandy 25 per cent. under proof, gin and rum 35 per cent. under proof.

The consumption of spirits, which had been increasing slowly for five or six years, decreased by 60 per cent. during the five years following the outbreak of the war. In 1918-19 the decrease amounted to one-third, as compared with the previous year. In the following year there was a decided increase, and the consumption per head rose almost to the level of 1917-18; in 1920-21 it declined by 16 per cent. In comparison with 1913 there has been an increase of 38 per cent. in the consumption of Australian spirits, and a decrease of 73 per cent. of imported spirits.

The consumption of beer per head increased by 33 per cent. between 1907 and 1913, but after the commencement of the war it decreased. During the three years 1918-20 the consumption increased, and in 1919-20 it was almost equal to that of 1913. In the following year there was a decrease of 8 per cent. Practically all the beer consumed is brewed in Australia.

Year.	Quantity of Beer consumed.			Per Head of Population.		
	Australian.	Imported.	Total.	Australian.	Imported.	Total.
	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
1901	13,118,300	1,757,900	14,876,200	9·60	1·28	10·88
1904	12,079,400	940,900	13,020,300	8·45	·66	9·11
1907	14,278,800	945,700	15,224,500	9·41	·62	10·03
1910	16,287,600	1,033,600	17,321,200	10·08	·64	10·72
1913	22,973,400	1,338,000	24,311,400	12·62	·74	13·36
1916-17	21,159,200	204,000	21,363,200	11·17	·11	11·28
1917-18	21,978,500	88,600	22,067,100	11·43	·04	11·47
1918-19	23,923,000	53,100	23,976,100	12·10	·03	12·13
1919-20	26,724,100	92,000	26,816,100	13·11	·05	13·16
1920-21	25,163,500	129,800	25,293,300	12·04	·06	12·10

The vine entering into consumption in New South Wales is chiefly the produce of Australian vineyards, but the quantity produced in the State is much less than might be expected in a country so eminently adapted for viticulture.

The consumption of both Australian and foreign wines declined progressively from 1904 to 1917; during the succeeding years the consumption of Australian wine increased, but the quantity of imported wines continued to decline.

Year.	Consumption of Wine.					
	Aggregate.			Per Inhabitant.		
	Australian.	Foreign.	Total.	Australian.	Foreign.	Total.
	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
1901	700,000	94,000	794,000	·51	·07	·58
1904	941,100	40,500	981,600	·66	·03	·69
1907	892,700	43,300	936,000	·59	·03	·62
1910	816,900	46,900	863,800	·50	·03	·53
1913	927,800	58,500	986,300	·51	·03	·54
1916-17	764,500	30,300	794,800	·40	·02	·42
1917-18	839,500	22,000	861,500	·44	·01	·45
1918-19	895,700	15,900	911,600	·45	·01	·46
1919-20	1,321,100	33,200	1,354,300	·65	·01	·66
1920-21	1,480,100	21,500	1,501,600	·71	·01	·72

The amount of money expended on intoxicating liquors in New South Wales in the year ended 30th June, 1921, is estimated to have been £11,034,000, or £5 5s. 7d. per head. Between 1913 (the year before the commencement of the war) and 1916-17 the prices of intoxicants increased, and the consumption decreased in each year until in 1916-17 the decreased consumption offset the increased prices and caused a reduction in the total drink bill.

During 1917-18 and 1918-19 there was a slight increase in the consumption per head of beer and wine, prices continued to rise, and the aggregate expenditure on intoxicants increased. The imposition of a new tariff in March, 1920, caused a further rise in prices, but there was a noticeable increase in the consumption of all kinds of intoxicants, and the drink bill increased by nearly 3 millions in 1919-20. Apparent reasons for the higher consumption were the return of the soldiers from overseas, and the general increase in wages. But it should not be assumed that the average consumption was abnormally high, as it was somewhat less than in 1913. In 1920-21 there was a further increase in the drink bill, but it was due entirely to higher prices, as there was a substantial decline in the quantity of intoxicants consumed.

Year.	Drink Bill.		Year.	Drink Bill.	
	Total.	Per Head of Population.		Total.	Per Head of Population.
	£	£ s. d.		£	£ s. d.
1901	5,000,000	3 13 2	1916-17	6,667,000	3 10 5
1904	4,406,000	3 1 8	1917-18	7,223,000	3 15 1
1907	5,064,000	3 6 9	1918-19	7,275,000	3 14 0
1910	5,304,000	3 5 8	1919-20	10,251,000	5 0 7
1913	7,001,000	3 16 11	1920-21	11,034,000	5 5 7

The drink bill of the United Kingdom in 1913 was estimated at £166,000,000, or £3 12s. per head; in 1920 it had increased to

£469,700,000, or £10 per head, notwithstanding a decline of about 24 per cent. in the consumption, measured in terms of absolute alcohol.

The following statement shows the consumption per head of intoxicating liquors in various countries at the latest date for which the information is available :—

Country.		Spirits.	Wine.	Beer.
		gallons.	gallons.	gallons.
New South Wales	{ 1920-21	·43	·72	12·10
...	{ 1919-20	·51	·66	13·16
South Australia ...	... 1920-21	·30	·75	12·29
Western Australia ...	... 1920	·56	1·11	18·64
Tasmania ...	... 1920	·48	·19	9·50
Australia ...	... 1919-20	·45	·50	13·39
New Zealand ...	... 1920	·76	·19	12·16
United Kingdom...	... 1916	·77	·22	20·84
Canada ...	... 1918-19	·39	·03	2·95
German Empire ...	... 1912	·64	·68	23·32
France ...	... 1917	·41	26·84	4·48
United States ...	... 1919	·79	·50	7·88

#### CONSUMPTION OF TOBACCO.

The amount of tobacco consumed in New South Wales, as estimated, at intervals since 1901, is shown in the following statement, special data having been obtained for estimates subsequent to 1909 :—

Year.	Total Consumption (000 omitted).				Per Head of Population.			
	Tobacco.	Cigars.	Cigarettes.	Total.	Tobacco.	Cigars.	Cigarettes.	Total.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1901	2,977	215	368	3,560	2·18	·15	·27	2·60
1904	3,199	184	512	3,895	2·24	·13	·36	2·73
1907	3,608	220	622	4,450	2·38	·14	·41	2·93
1910	3,707	239	873	4,819	2·29	·15	·54	2·98
1913	3,853	306	1,413	5,572	2·11	·17	·78	3·06
1916-17	4,098	263	1,283	5,644	2·16	·14	·68	2·98
1917-18	4,208	244	1,318	5,770	2·19	·13	·68	3·00
1918-19	3,918	252	1,484	5,654	1·99	·13	·76	2·88
1919-20	4,638	292	1,937	6,867	2·28	·14	·95	3·37
1920-21	4,370	273	1,958	6,601	2·09	·13	·94	3·16

The quantity of tobacco (including cigars and cigarettes) consumed in 1920-21 was 6,601,000 lb., which represents an average of 3·16 lb. per head of population. The average has increased throughout the period reviewed. From 1914 to 1920 the retail price of tobacco (cut) of popular brands advanced from 6s. 8d. to 12s. per lb. In March, 1921, there was a decline of 8d. per lb.

As regards the description of tobacco used, the proportion of cigarettes advanced during the period under review from 10 to 30 per cent., and the proportion of ordinary tobacco declined from 84 to 66 per cent.

Of the total tobacco consumed in 1920-21, about 97 per cent. was manufactured in Australia, the proportions of the different descriptions being of ordinary tobacco 97 per cent. made in Australia, cigarettes 96 per cent., and cigars 80 per cent. The proportion of tobacco and cigarettes made in Australia in 1911 were 85 per cent. and 94 per cent. respectively; a marked increase—from 46 to 80 per cent.—has occurred since 1911 in the proportion of cigars of Australian manufacture.

The following statement shows the quantity of Australian and of imported tobacco consumed in 1901, in 1911, and in 1920-21 :—

Description.		Total Consumption.			Per Head of Population.		
		Australian.	Imported.	Total.	Australian.	Imported.	Total.
		lb.	lb.	lb.	lb.	lb.	lb.
Tobacco ...	{ 1901	2,081,200	896,000	2,977,200	1·52	·66	2·18
	{ 1911	3,261,100	566,100	3,827,200	1·96	·34	2·30
	{ 1920-21	4,301,600	68,900	4,370,500	2·06	·03	2·09
Cigars ...	{ 1901	15,600	198,900	214,500	·01	·14	·15
	{ 1911	125,000	145,700	270,700	·07	·09	·16
	{ 1920-21	219,200	53,400	272,600	·10	·03	·13
Cigarettes ...	{ 1901	288,200	79,900	368,100	·21	·06	·27
	{ 1911	1,015,100	61,400	1,076,500	·61	·04	·65
	{ 1920-21	1,890,100	68,100	1,958,200	·91	·03	·94
Total ...	{ 1901	2,385,000	1,174,800	3,559,800	1·74	·86	2·60
	{ 1911	4,401,200	773,200	5,174,400	2·64	·47	3·11
	{ 1920-21	6,410,900	190,400	6,601,300	3·07	·09	3·16

Although the tobacco is called "Australian," the bulk of it is made from imported leaf, as less than 10 per cent. is made from leaf grown in Australia.

#### STANDARDISATION OF FOOD.

The important legislation relating to the standardisation of food commodities and the protection of the food supply from contamination and deterioration is contained in the Public Health Act and the Pure Food Acts; also enactments relating to the supervision of dairies and of the slaughtering of stock for food.

The administration of these laws in the incorporated areas is primarily the duty of the Board of Health, but the function may be left to the municipal and shire councils. If a council fails to fulfil the duty satisfactorily, the Board itself may exercise its powers in respect of these matters, or may take steps to compel the council to do so.

In making regulations under the Pure Food Act to prescribe standards for the composition, purity or quality of foods and drugs, the Board of Health acts upon the recommendations of an Advisory Committee, consisting of the president of the Board, medical men, and chemists, merchants, and others conversant with trade requirements. Efforts are being made to secure uniform pure food laws throughout Australia, and the regulations have been standardised so far as the divergence of the laws of the various States will permit.

Under the Pure Food Act the sale or exhibition for sale of food which is adulterated or falsely described is prohibited, and packages must be labelled with the true description and weight of the contents and the name of the maker or vendor. The Commonwealth Department of Trade and Customs exercises supervision in regard to the composition and labelling of food and of drugs imported into Australia.

#### STANDARD WEIGHTS AND MEASURES.

The law for the regulation of weights and measures is embodied in the Weights and Measures Act of 1915 and its amendment, and in the Bread Act.

The Weights and Measures Act replaced an obsolete law passed in 1852. Its principal requirements are that traders' weighing and measuring appliances must be kept to a specified degree of accuracy and be submitted periodically to the Weights and Measures Office for verification, and that purchasers must receive full weight and measure.

The standard weights and measures of the United Kingdom have been adopted. All articles sold by weight must be sold by avoirdupois weight; except precious metals, by troy weight; precious stones, by metric carat; drugs, retail, by apothecaries' weight. Sales by retail must be according to net weight or measure, and the practice of selling certain vegetables—*e.g.*, green peas in the pod and other commodities—by measure of capacity has been prohibited by regulation.

Special provision has been made to prevent fraud in respect of the weighing of coal and firewood. In the metropolitan and Parramatta police districts, and in other districts as proclaimed, coal and firewood must be sold by weight, though in case of quantities exceeding 5 cwt. they may be sold otherwise, with the written consent of the purchaser. Persons delivering coal or firewood are required under the regulations to carry weighing instruments, and, if requested by the purchaser, to check the weight of the goods delivered.

The regulations relating to the type of weighing and measuring appliances are modelled on those of the London Board of Trade and of Canada, and those relating to the standard size of packages containing food and drugs were made upon the recommendation of the Pure Food Advisory Committee. A clause of the Act extends to all goods, a law which under the Pure Food Act of 1908 applied to food and drugs, *viz.*, that commodities for sale in packages must have the net weight or measure stamped thereon.

Weights and Measures Offices have been established in Sydney and in Newcastle, and the police act as inspectors to enforce the provisions of the Act in other districts.

The weight of bread is regulated under the provisions of the Bread Act of 1901. The standard loaves weigh 1 lb., 2 lb., and 4 lb. Operations under the Act are subject to limitations, as the result of legal decisions that the existing law does not authorise the inspection of bread in the course of delivery, and that an inspector may enter a bakehouse between the hours of sunset and sunrise only.

#### PUBLIC MARKETS.

The Acts relating to the incorporation of local Government areas empower the Councils of Municipalities and of Shires to establish markets, and to regulate the hawking and peddling of food commodities within the areas under their jurisdiction.

The City Council has established large markets in Sydney for vegetables, farm produce, fruit, fish, and poultry.

The vegetable market has 288 stalls, which are occupied by the *bona fide* grower, who brings his own produce to market, and conducts the sale by private treaty; the charges are on the dues system at 1s. 6d. per cart-load, the minimum amount payable weekly for each stall being 4s. 6d.

The produce market is occupied almost entirely by agents, who receive products from the country and oversea; these agents are allotted stands on the scale of 1s. 6d. per load, with an additional reserving fee of 1s. per week for the particular stand. Surrounding this market are stores, which are leased to the agents, who distribute to suburban and distant centres.

The fruit market was designed for the speedy and careful handling of this delicate food product. Fruit may be conveyed to the market directly by means of a special railway siding, which connects with the main railway system. Provision is made for sales by auction or by private treaty. Half of the market is reserved for the use of the growers, the charge for a stand



being 2s. per day; the remainder is divided into stands which are let to agents at a rental of 11s. per week.

In the fish market supplies are consigned direct to the Council from the various districts, and are sold by the Council's officers at auction. Salt water, pumped from the harbour, is supplied to the markets for cleansing the fish, and a cooling chamber is provided.

In all these markets the officers of the Council are charged with the necessary authority for inspection and condemnation.

The poultry market provides accommodation for fifteen to twenty thousand head of poultry; there is also a special floor for eggs, bacon, butter, cheese, etc. The market is subdivided into stands, which are let to poultry auctioneers; the Council supervises the cleanliness of the market, but has no power in regard to inspection.

The area and cost of the several markets are as follows:—

Market.	Floor Space.	Cost of Market.	Market.	Floor Space.	Cost of Market.
	sq. ft.	£		sq. ft.	£
Vegetable ...	95,560	127,000	Fish ...	47,517	49,000
Produce ...	45,300	48,300	Poultry ...	12,200	27,500
Fruit ...	143,000	119,500			

Cold storage works have been constructed in the market area immediately adjoining the Fruit Markets. They are equipped with chilling and freezing rooms for the storage of fruit, dairy and farm produce, mutton and rabbits, and their cost was £94,000.

The total storage capacity of the chambers, excluding passages and grading rooms, is 224,130 cubic feet. Provision is made to supply power for an ice-making plant, also for a further addition of cooling space as may become necessary.

The Council issues licenses to hawkers for the sale of commodities within the city area; during the year 1921 the number of annual licenses was 950, and 5,029 weekly licenses were issued to 1,776 persons. Of the 2,726 licensees the majority obtain their permits in order to sell food commodities, the figures for the year 1921 being 1,458 for fruit and vegetables, 618 for other foods, etc., and 650 for other commodities. With the exception of the fruit vendors, most of the licensees hawk their goods from door to door, but the fruit vendors usually obtain a license for a fixed stand, and are subject to special regulations in regard to the cleanliness of their stalls or barrows and the quality of the fruit and vegetables sold. The fees charged to hawkers for yearly licenses are as follows:—vehicle 20s., barrow 5s., and basket 5s.; and the fees for weekly licenses are 2s., 1s., and 6d. respectively. The fruit stands are allotted by ballot and the rental varies according to position, seasonal conditions, and other circumstances.

Outside the city area the local governing bodies have made little use of their powers in relation to the establishment of markets. During the recent period of rapidly rising prices public attention was directed towards the possibility of reducing the retail prices of goods by bringing the consumer into direct communication with the producer, thus eliminating excessive charges for distribution. As a result of the movement, municipal markets were opened in the following suburbs:—Paddington, North Sydney, Mosman, Randwick, Glebe, Gordon, Waterloo, and Hurstville. In the country town of Albury a municipal market was opened; and sites for markets were purchased in Parramatta and Newcastle, important centres of

well populated districts, where it is probable that properly organised markets would repay the expense of establishment.

In the majority of cases there appears to have been little preliminary organisation; the amounts expended by the Councils were small, and were devoted mainly to the provision of a site where stalls were erected and let at low rentals for retailing perishable goods. As the general level of prices began to fall, public interest waned. Many of the markets were not well patronised, and they were discontinued. At Paddington and North Sydney permanent market buildings were erected. In Paddington the building cost £1,735; it contains eleven stalls where meat, groceries, fruit, vegetables and other goods are sold by retail. In one stall the Council sells food commodities on a commission basis; the others are let at a minimum rental of 7s. 6d. per week. In North Sydney the cost of the market building was £3,240, and the land is valued at £1,000. There are 39 stalls for the sale of fruit, vegetables, fish, poultry, etc.; the rents range from 7s. 6d. to 12s. 6d. per week; sales are by retail only.

At Randwick the Council expended the sum of £103 in providing 17 stalls for the sale by retail of fruit, vegetables, fish, and small goods; sales of fruit and vegetables were conducted by the Council as agent, and commission was charged at the rate of  $7\frac{1}{2}$  per cent. At Glebe a dépôt was converted into a market at the cost of £80, and the principal commodities for sale were fruit and vegetables. At Mosman the Council rented a site and expended £134 in making it suitable for the purpose of marketing; eight stalls were leased for the retail sale of produce at a rental of 7s. 6d. per week. The Randwick, Glebe, and Mosman markets have been closed.

In Gordon, in the shire of Ku-ring-gai, the Council has provided stalls where local producers may sell by retail fruit, vegetables, poultry, etc.; the market is open on Saturdays only, and the rental of a stall is 2s. 6d. per day.

In Albury the Council obtained the use of a site with 30 stalls for two days a week for a period of six months at a rental of £1 per week. Fruit, vegetables and dairy produce are sold by the producers or auctioned by the Council on their behalf. Owing to lack of support by the producers it is unlikely that the market will be continued.

#### MEAT SUPPLY.

The estimated number of livestock (cattle, sheep, and pigs) required for food in New South Wales in various years since 1901 is shown in the following statement. These figures differ from those published elsewhere in this volume showing the animals killed in slaughtering establishments, as those include animals slaughtered for export and animals treated in boiling-down works. Moreover, the number of pigs shown in the table is larger than the number slaughtered in New South Wales in some years, when the production of bacon was not sufficient for local requirements.

Year.	Bullocks and Cows.	Calves.	Sheep and Lambs.	Pigs.
1901	297,200	18,500	2,717,400	264,900
1904	284,600	14,400	2,301,600	244,800
1907	348,000	28,200	3,104,200	260,500
1910	380,900	50,200	3,894,600	315,800
1913	462,800	70,900	3,896,900	310,000
1914-15	403,600	59,300	3,521,900	289,200
1915-16	331,200	30,300	3,358,500	234,600
1916-17	304,700	36,800	2,941,000	304,800
1917-18	277,600	28,500	2,436,400	335,400
1918-19	311,900	49,000	2,975,600	375,900
1919-20	401,600	74,000	3,514,200	286,100
1920-21	404,400	78,300	3,483,500	247,600

In the Metropolitan Abattoir Area (comprising the county of Cumberland), all operations in connection with the sale, slaughter, and inspection of stock, and with the sale of meat, are under the control of the Metropolitan Meat Industry Board, which was created in 1916, in terms of the Meat Industry Act, 1915. The Board consists of three members, one representing the producers, one the consumers, and a chairman.

In the Newcastle district, *i.e.*, within a radius of 14 miles from the Newcastle Post Office, slaughtering and inspection are controlled by the Newcastle District Abattoir Board. Outside the Metropolitan and Newcastle districts slaughtering is done at private abattoirs, which are subject to inspection by officers appointed by the local authorities and by the Board of Health.

The land and buildings vested in the Metropolitan Meat Industry Board include the cattle saleyards at Flemington, covering an area of 66 acres, pig and calf saleyards and markets at Homebush, and Public Abattoirs at Homebush Bay.

The abattoirs are close to the saleyards on a site containing 1,400 acres, of which 1,200 acres are retained as paddocks for resting stock prior to slaughter, and 200 acres are used for buildings, roads, and railways. The buildings contain mechanical devices of modern type for treating all classes of stock, meat, and by-products. The number of stock which may be slaughtered per day is as follows :—Sheep 15,000, cattle 1,500, pigs 2,000, and calves 1,500. The refrigerating works are capable of freezing 10,000 sheep per day, or their equivalent in cattle, and the storage capacity is sufficient for 250,000 carcasses of mutton. A canning factory provides for the treatment of 1,500 sheep per day, or their equivalent in cattle.

The carcase butchers who operate at the Public Abattoirs purchase stock on the hoof at Flemington and supply the labour for slaughtering, paying at fixed rates per head of stock treated. The abattoir charges, including fees for inspection and chilling for forty-eight hours, are as follows :—Cattle 4s. 6d. per head ; sheep 3½d. ; pigs 1s. 9d. ; calves 1s. 6d.

The following table shows the slaughtering at the Public Abattoirs during each of the last five years. The figures for the year 1917 include stock slaughtered at Glebe Island, where the abattoirs have been closed :—

Year.	Sheep.	Cattle.	Calves.	Pigs.
1917	993,874	103,231	23,574	76,780
1918	1,620,619	114,096	33,832	120,638
1919	2,355,446	185,799	49,818	118,310
1920	1,724,773	175,612	73,817	77,991
1921	1,843,390	187,996	76,038	91,102

The meat is transported by rail from Homebush to the distributing depôts ; thence it is delivered by the carcase butchers to the retail shops. The Central Dépôt is situated within the city area, on the Darling Harbour railway line, and depôts have been opened at St. Leonards and Rockdale to facilitate delivery in the suburban districts.

## FISH SUPPLY.

Fish is not an important article of diet in New South Wales. The sea-board waters contain immense supplies of edible fish, but the average annual consumption is less than 14lb. per head. Fishing in the river estuaries and coastal lakes and inlets, where the bulk of the supply is obtained, is conducted by private enterprise, and deep-sea fishing is a State undertaking. The private fishermen consign their catches to agents in Sydney, where there are two fish markets, viz., the Municipal Fish Market and the Commonwealth Co-operative Fish Exchange, Redfern. The former is controlled by the City Council, which acts as selling agent, though private agents are allowed to conduct business in the Council's buildings. The Co-operative Fish Exchange is owned and controlled by a private company, but it is subject to inspection by a Government inspector acting under the Pure Food Act. In order to regulate the sale of fish in the markets, regulations have been drafted by the Government to provide for the licensing of fish agents and the compulsory sale of fish by weight and by auction.

The State Trawling Industry was initiated in 1915, with the object of developing the deep-sea fisheries in order to provide a regular supply of cheap fish. The bulk of the fish is distributed by means of retail shops, of which there are thirteen in the Metropolitan area, one in Newcastle, and four in country towns. The average selling price, calculated on the net weight sold in 1917-18 was 5·9d. per lb., in 1918-19 6·2d., and in 1919-20 it rose to 7·2d. In 1920-21 the average selling price was 5·4d. per lb., but a large proportion of the fish was sold as soon as the trawlers landed their catches, instead of being cleaned before sale as in former years. The prices charged vary according to the class of fish, viz., fresh fish, 1d. to 11d. per lb.; smoked, 7d. to 1s. per lb.; cray-fish, 2s. to 2s. 6d. each; and prawns, 8d. to 1s. 6d. per lb.

An effective method of distributing fresh fish to private consumers has not been organised. Owing to the climatic conditions it is necessary to provide special facilities for handling this perishable commodity, and it would not be profitable to do so unless the quantities marketed were large and the supply regular. It is not probable that fish will become a popular food until this difficulty has been overcome.

## BREAD SUPPLY.

The supply of bread is sold for the most part by the bakers direct to the consumers. A State bakery supplies the Government institutions. Baking at night has been prohibited since June, 1914; prior to that date practically all bread was delivered at the consumer's house, but as much of the bread cannot now be delivered on the day of baking, many customers buy at the shops in order to obtain fresher bread.

Prior to the war the price was fixed ordinarily by the Master Bakers' Association with relation to the declared price of flour, which was fixed by an association of millers, but since August, 1914—except during the months March to August, 1919—the prices of bread and of flour have been determined by Government proclamation.

The variations in the price of bread in Sydney since 1900 are shown below in conjunction with the price of flour at the time when the price

of bread was altered. These prices are for delivery and weekly payments ; in recent years the price has been  $\frac{1}{4}$ d. per loaf less for cash over the counter.

Date.	Price of 2-lb. Loaf.	Cost of Flour per ton.	Date.	Price of 2-lb. Loaf.	Cost of Flour per ton.
	d.	£ s. d.		d.	£ s. d.
1900... ..	2 $\frac{1}{2}$	6 15 0	1916—March ...	3 $\frac{3}{4}$	11 5 0
1902—April ...	2 $\frac{3}{4}$	8 15 0	1917—June ...	4	11 0 0
September ...	3	9 10 0	1919—March ...	4 $\frac{1}{2}$	11 0 0
November ...	3 $\frac{1}{4}$	10 10 0	October ...	4 $\frac{1}{2}$	11 15 0
1903—February ...	3 $\frac{1}{2}$	12 0 0	December ...	4 $\frac{3}{4}$	11 17 6
December ...	3 $\frac{1}{4}$	10 10 0	1920—January ...	5	12 15 0
1904—September ...	3	9 0 0	February 2... ..	5 $\frac{3}{4}$	16 7 6
1907—June ...	3 $\frac{1}{4}$	8 15 0	„ 9... ..	6 $\frac{1}{4}$	19 2 6
1909—March ...	3 $\frac{1}{2}$	10 0 0	December ...	6 $\frac{1}{4}$	19 12 6
1910—June ...	3 $\frac{1}{4}$	8 15 0	1921—September ...	6 $\frac{3}{4}$	20 17 6
1912—May ...	3 $\frac{1}{2}$	9 15 0	December ...	5	11 15 0
1914—December ...	4	11 17 6			
1915—July ...	5	17 5 0			
October ...	4	11 17 6			

### MILK SUPPLY.

The conditions under which milk is produced and distributed are subject to regulation under the Dairies Supervision Act of 1901, the Pure Food Act of 1908, and the Dairy Industry Act of 1915. All dairymen and milk-vendors must be registered ; the duty of registering dairies, and supervising and inspecting dairy premises and cattle, is vested in local authorities, but in actual practice the administration is conducted by the Board of Health. At 31st December, 1921, there were 20,530 registered dairymen in the State, and the cattle in their dairy herds numbered 923,986 ; there were also 3,553 registered milk-vendors. In the metropolitan district there are 341 registered dairymen, with 8,037 cattle, and 3,321 registered milk-vendors.

The standard for milk is fixed by regulation under the Pure Food Act. It must contain not less than 8·5 per cent. of milk solids (not fat), and 3·2 per cent. of milk fat. During 1921 the Pure Food and Municipal Inspectors collected 6,775 samples of milk, and 199 were below standard ; prosecutions were instituted in 94 cases, and penalties in fines and costs amounted to £511.

The milk supply of Sydney is derived partly from dairies in the metropolitan area and partly from dairies in country districts, viz., the South Coast district between Wollongong and Nowra, the districts traversed by the Main Southern Railway between Liverpool and Moss Vale, the Penrith, Windsor, and Richmond Districts, and the districts around Branxton, Singleton, and Gosford, on the Northern Railway line.

The milk from the metropolitan dairies is distributed direct to the consumer, and the country milk is handled by three large distributing companies, being subjected to a pasteurising process before distribution. In 1920-21, these companies distributed over 12 million gallons of pasteurised milk.

The proportion of the supply derived from the metropolitan dairies is decreasing steadily, as the pressure of population and the demand for residential sites causes the land used formerly for dairying to be diverted to other uses.

The value of milk as an article of diet, especially for young children, renders it most desirable that a more plentiful supply should be obtainable at a low price, which would enable families to consume it in sufficient quantities. In 1922, the Board of Trade commenced an investigation into the question of milk distribution in the metropolitan and other large industrial centres, with a view to devising a more equitable scheme, whereby the producer

would be guaranteed a ready market, and the consumers a fuller supply of fresh milk.

The range of wholesale and retail prices of milk during each year since 1901 is shown below. The wholesale price represents that paid by the distributing companies to the farmer for milk delivered on trucks at country railway stations; the retail price for country milk is that charged by these companies, or by milk-vendors, to the householder; and for fresh milk the retail price is that charged by the metropolitan dairymen.

The prices were fixed by the State or Federal authorities from July, 1915, to January, 1919; and from July, 1919, by the Necessary Commodities Control Commission or the Profiteering Prevention Court.

Year.	Wholesale.	Retail.		Year.	Wholesale.	Retail.	
		Country.	Fresh.			Country.	Fresh.
	per gal.	per qt.	per qt.		per gal.	per qt.	per qt.
	d. d.	d. d.	d. d.		d. d.	d. d.	d. d.
1901	6 to 7	4	4-5	1912	6 to 9	5	6
1902	6 „ 10	4-5	5-6	1913	6 „ 9	5	6
1903	6 „ 10	5	5	1914	8 „ 11	5	6
1904	5 „ 6	3-4	4-5	1915	8 „ 11	5-5½	6
1905	5½ „ 7	4	4	1916	8 „ 12	5-5½	6
1906	6 „ 7	4	4	1917	10 „ 12	5½	6
1907	6½ „ 9	4-5	4-5	1918	10 „ 15½	5½	6
1908	6 „ 12	5	5	1919	15½ „ 21½	5½-7½	6-9
1909	7 „ 10	5	5	1920	14 „ 18	7½-8½	8-10
1910	6 „ 9	4-5	5	1921	13 „ 17	7½-8½	8½-10
1911	6 „ 9	4-5	5				

The retail prices in Sydney, at the beginning of the year 1921, were: country milk 8½d. per quart, and local 10d.; at the end of the year the prices were 7½d. and 8½d. respectively. The wholesale price ranged from 1s. 5d. per gallon in January to 1s. 1d. in December.

#### SUPPLY OF GROCERIES.

The main items classified under the heading of groceries are produced in Australia, with the exception of preserved fish, rice, sago, tea, coffee and cocoa; chemicals used in the manufacture of condiments, and baking powder, etc., are imported also.

The great bulk of the grocery trade is handled by wholesale merchants, and a large proportion of the retail trade, especially in the country districts, is financed by them. The wholesale merchants are well organised, the principal firms being associated in a Distributors' Co-operative Company, registered under the Companies Act. With the object of preventing price-cutting and of obtaining the most favourable terms in purchasing from manufacturers and their agents, a number of retail storekeepers have formed associations for wholesale buying, but organisation among the retailers is not extensive.

In normal seasons sugar is produced in New South Wales and Queensland in sufficient quantity to supply local requirements. Since 1915 it has been marketed in New South Wales under an agreement between the Commonwealth Government and the Colonial Sugar Refining Co., Ltd. The company undertakes the distribution of the sugar and delivers it usually to the retailers upon the orders of wholesale merchants. Under an agreement made in August 1920, the price paid to sugar-mill owners for raw sugar is fixed at a minimum rate of £30 6s. 8d. per ton of 94 net titre sugar f.o.b., and the company is allowed the following charges for refining:—27s. per ton of raw sugar melted, subject to adjustment, if refining costs are found to be less than 27s. per ton; 7s. per ton as a selling charge on all sugar sold or

melted; 22s. 6d. per ton as managing charge, including interest on and depreciation of plant, etc.; and additional allowances for shipping charges, costs of sacks, freight, insurance, wharfage, etc., and the cost of tinning and packing syrup and treacle, of packages for refined sugar, and of coal consumed.

The prices at which raw or refined sugar, syrup and treacle are sold are fixed by the Commonwealth Government; the wholesale price of refined sugar is £49 per ton, and the retail price in Sydney is 6d. per pound.

The tea consumed in New South Wales is imported mainly from Ceylon and Java. During the three years ended June, 1921, these two countries each furnished about 43 per cent. of the total importations; 11 per cent. was imported from India, and only 2 per cent. from China. The corresponding figures for the three pre-war years, 1911-13, were Ceylon 58 per cent., Java 13 per cent., India 20 per cent., and China 9 per cent. The Interstate Commission, in a report issued in 1918, commented on the excessive expenditure incurred in the retail distribution of tea. Some firms employ travellers in house-to-house canvass and others spend considerable sums in advertising brands which they distribute through grocers. The great bulk of the coffee is imported from Java and India and the importation from Java has increased considerably since 1913.

Jams and preserved fruit are manufactured in Australia in larger quantities than the local demand can absorb; during the war there was a great expansion in the export trade, but increases in the cost of production led to a shrinkage in the local consumption of the factory made article, though it encouraged home production, of which records are not available. A large quantity of the preserved fruit canned in the State is the product of a State factory at Leeton, in the Murrumbidgee Irrigation Area; jam also is made there.

Biscuits are manufactured locally, and a large quantity is exported annually to the islands of the Pacific. The manufacturers supply to retailers direct as well as to the wholesale firms; some retailers import from Victoria also. In respect of rice and cereal foods manufacturers have formed associations or combinations; rice is imported mainly from China and India and it is dressed locally by a mechanical process. Currants and raisins are produced on the Murrumbidgee Irrigation Area and at Curlwaa, also on the irrigation areas in neighbouring States; the trade is controlled by an association. Soap for household use is manufactured in large quantities and an improvement in the quality of toilet soaps has caused a decrease in importation. Matches are supplied partly by local manufacture and partly by importation, Sweden being the chief source of the imported article; wooden safety matches are gradually replacing wax vestas, especially in the cultivated and grazing areas, owing to danger of fires in the dry summer months.

#### FRUIT AND VEGETABLES.

The fruit supply is derived mainly from the local orchards and from Victoria, Tasmania, and Queensland. From November or December to February or March the supply is for the most part locally grown; from March to October the market for all fruits except citrus is supplied chiefly from the other States; and from May to December local supplies of citrus fruits are available. Prior to the war bananas were imported in large quantities from Fiji, but in recent years the Tweed River district of New South Wales has become the chief source of supply.

In Sydney there are two fruit markets, viz., the Fruit Exchange, conducted by a private company, and the City Market, controlled by the City Council. Market sales are conducted generally by private treaty. The majority of

the country and interstate distributors operate in the Fruit Exchange, which is exclusively a wholesale market. In the City Market a considerable amount of retail, as well as wholesale, trade is transacted.

The supply of vegetables, except potatoes and onions, is obtained from local sources and marketed at the City market. A large proportion of the potato supply is imported from Victoria and Tasmania, and the bulk of the onions from Victoria. Imported potatoes are sold by private treaty on the wharf shortly after arrival, and the prices are fixed by arrangement between the sellers; locally-grown potatoes are sold by auction in the railway yards.

On account of the numerous varieties and grades of fruit and vegetables, it is extremely difficult to ascertain satisfactory average retail prices, and on account of the large quantities grown in home gardens, it is, if anything, more difficult to estimate the local consumption. Moreover details are not available regarding the production of the different kinds of vegetables in market gardens, the figures being included under a general heading, as shown in the chapter relating to Agriculture.

The following statement shows, in regard to a few varieties, the average wholesale prices in Sydney during the last six years, in comparison with the prices in 1914:—

Fruit and Vegetables.	1914.	1916.	1917.	1918.	1919.	1920.	1921.
Apples, per bushel ..	6s. to 9s.	6s. 6d. to 10s.	9s. to 12s.	8s. to 11s.	10s. to 15s.	9s. to 12s.	11s.
"    cooking, per bushel	7s. 6d.	6s.	9s. 6d.	8s.	10s.	10s.	8s.
Oranges, per bushel ..	8s. to 14s.	7s. 6d. to 15s.	7s. to 12s.	7s. to 14s.	10s. to 17s.	9s. to 15s.	14s.
Mandarins " ..	11s.	11s.	9s. 6d.	11s.	13s.	12s.	9s.
Pears " ..	12s.	11s.	9s. 6d.	12s.	13s.	12s.	11s.
Passion Fruit, per $\frac{1}{2}$ bushel	7s.	6s. 6d.	7s.	10s.	10s. 6d.	11s.	12s.
Bananas, per $\frac{1}{2}$ bushel ..	15s.	15s. 6d.	16s. 6d.	15s.	22s.	26s.	18s.
Pineapples " ..	9s.	7s. 6d.	9s.	9s. 6d.	12s.	14s.	12s.
Cabbages, per doz. ..	5s. to 6s.	5s. to 7s.	6s. to 7s.	7s. 6d.	10s.	10s.	7s. 6d.
Cauliflowers " ..	6s. to 8s.	7s. to 8s.	8s.	8s. 6d.	11s. 6d.	12s. 6d.	14s. 6d.
Peas, per bushel ..	5s. 6d.	7s.	8s.	9s. 6d.	11s.	11s. 6d.	12s.
Beans " ..	3s. to 4s.	4s. to 5s.	5s. to 6s.	5s. 6d.	8s.	8s. 6d.	7s. 6d.

#### WHOLESALE PRICES.

The movement of wholesale prices in Sydney from 1901 to 1921 is shown in the following tables of index numbers.

In the collection of data for the tables, endeavour has been made to obtain information from representative and most reliable sources as to the prices of typical grades of commodities. Trade journals and newspapers giving prominence to market reports constitute the principal sources of information, while, in some cases, inquiries have been made from manufacturers and merchants. Monthly averages have been obtained wherever possible, and an annual average has been calculated by taking the arithmetic mean of the monthly averages. This process involves a degree of error which, however, is probably small. The effect has been to state a predominant price for the year, and, in view of the fact that a system of fixed weights has been used, the results indicate simply and solely the extent of variations in the prices themselves, and pay no regard to changes of usage. A statement showing the average wholesale prices in each year from 1901 to 1920 is published in the "New South Wales Statistical Register for 1919-20."

The wholesale price index numbers are based on the prices of 100 commodities which include the majority of items of importance in the economic life of the State. Articles of clothing and furniture, and most of the highly manufactured products, have been excluded, because fashion, changes of grade and quality—due to the introduction of new processes, and to numerous other considerations—militate against the satisfactory determination of prices of such goods.



This deficiency, however, has been supplied, in a large measure, by allowing to the raw materials, which are the bases of these goods, the full consumption-weight. Thus, raw cotton and wool are listed, instead of many items of cotton and woollen goods, four grades of leather instead of boots, shoes, harness, and other manufactures of leather, and six grades of timber instead of furniture and other manufactures of wood.

The changes in prices of raw materials, are, perhaps, more violent and more rapid than those of manufactured articles, but on the whole, the index numbers based on these probably afford a fair indication of the general movement of prices over relatively long periods of time.

The weight given to the price of each commodity is based on the average annual consumption in New South Wales during the three years, 1911-1913.

The procedure has been to multiply the weight of each commodity by its price in each year, to add the products thus obtained, and finally to calculate the index numbers, with the year 1911 as base, by dividing the successive yearly aggregates by the 1911 aggregate.

The commodities have been arranged in eight groups, corresponding with those of the Commonwealth Statistician in his wholesale price index numbers for Melbourne.

The grouping places together those articles which are in close economic relationship, of which prices might be expected to move in sympathy, or from causes common to all.

For further details relating to the composition of the index numbers of wholesale prices, readers are referred to the 1919 and 1920 issues of the Year Book in which are shown the grade of the articles or commodities included, the source of information as to prices, and the weights applied to the various prices.

The following table furnishes the results of the investigation for the twenty years since 1901. It should be noted that the indexes are not comparable between groups except to illustrate the respective changes in price:—

Year.	I. Agricultural Produce.	II. Groceries	III. Wool, Cotton, Leather, Jute.	IV. Metals and Coal.	V. Building Materials	VI. Meat.	VII. Dairy Produce.	VIII. Chemicals.	All Commodities.*
1901	834	949	737	1001	745	1222	963	977	904
1902	1266	940	750	964	756	1763	1235	965	1072
1903	1181	925	866	904	811	1549	1114	960	1042
1904	789	943	914	942	802	1256	859	952	911
1905	972	985	837	952	773	1081	924	952	933
1906	929	960	937	996	806	1163	953	951	955
1907	1003	952	986	1068	848	1196	1010	987	1001
1908	1343	973	866	1034	884	1327	1141	961	1085
1909	1134	982	920	1004	885	1094	1053	932	1014
1910	1012	986	1036	988	912	1014	1030	958	997
1911	1000	1000	1000	1000	1000	1000	1000	1000	1000
1912	1339	1036	968	1001	1079	1323	1133	980	1129
1913	1069	1033	1043	1039	1107	1379	1093	1003	1092
1914	1135	1016	1009	1079	1105	1669	1128	1220	1137
1915	1648	1099	976	1270	1137	2596	1349	1426	1401
1916	1163	1245	1367	1725	1241	2896	1380	1617	1489
1917	1127	1298	2093	2358	1421	3007	1440	1956	1727
1918	1377	1405	2614	2740	1685	2618	1487	2605	1933
1919	1930	1492	2501	2454	1879	2873	1718	2089	2090
1920	2430	1914	3079	2602	2415	3113	2236	2301	2503
1921	1750	1941	1471	2511	2259	1921	2020	1863	1956

\* Weighted average.

Prices were at the lowest point at the beginning of the period under review, but in 1902 there was an increase of 18 per cent. owing to the rise in prices of agricultural and dairy produce, and of meat, during the drought of that year. In the good seasons which followed there was a decline, and in 1904 the index number was only slightly higher than in 1901. From 1904 to 1908 there was a steady increase, followed by a decline in 1909 and 1910; then the upward movement recommenced. Since 1910 prices have increased almost constantly, as, with the exception of 1913, each year showed an advance on the preceding year. The greatest increases were 23 per cent. in 1915, 16 per cent. in 1917, and 20 per cent. in 1920. In 1921 there was a decrease of 22 per cent., a marked drop having taken place in the groups wool, cotton, etc., 52 per cent., meat 38 per cent. and agricultural produce 28 per cent.

The index numbers in the above table do not afford any indication of the changes in prices which occurred during any year. From the end of 1914 to July, 1920, there had not been any marked drop in the index numbers, although groceries fluctuated after May; but in August a decline commenced in all other groups of commodities with the exception of meat and dairy produce, which reached their highest points in August, 1920, and in February, 1921, respectively.

The following table gives the monthly index numbers from January, 1921, to June, 1922, from which the movement month by month may be gauged:—

Month.	I. Agricultural Produce.	II. Groceries	III. Wool, Cotton, Leather, Jute.	IV. Metals and Coal.	V. Building Materials	VI. Meat.	VII. Dairy Produce.	VIII. Chemicals.	All Commodities.
1921.									
January ...	2001	1981	1860	2616	2449	2886	2519	2064	2255
February ...	1838	1980	1634	2615	2348	2601	2550	1925	2148
March ...	1893	1971	1508	2597	2348	2643	2309	1889	2118
April ...	1867	1958	1327	2551	2244	2140	2180	1773	2003
May ...	1741	1947	1166	2541	2248	1915	2099	1780	1919
June ...	1727	1932	1232	2542	2250	1968	2041	1856	1923
July ...	1718	1926	1253	2526	2254	1858	1949	1858	1903
August ...	1728	1925	1304	2510	2209	1744	1934	1877	1892
September ...	1792	1921	1632	2474	2219	1388	1881	1877	1909
October ...	1657	1921	1664	2412	2180	1448	1643	1883	1854
November ...	1600	1925	1559	2391	2191	1224	1568	1798	1797
December ...	1434	1910	1500	2365	2176	1239	1573	1795	1746
1922.									
January ...	1521	1907	1445	2267	2174	1549	1570	1795	1772
February ...	1478	1901	1403	2259	2148	1337	1533	1666	1723
March ...	1511	1881	1451	2260	2121	1249	1538	1677	1725
April ...	1523	1873	1451	2240	2075	1291	1638	1670	1732
May ...	1631	1870	1443	2177	2076	1279	1877	1670	1766
June ...	1601	1874	1474	2204	2076	1291	1875	1670	1769

Throughout 1921 the decline in the wholesale prices was continuous in the groups agricultural produce and metals, and, after February, in dairy produce. Meat prices showed remarkable decreases during the year, especially in April and September. Prices of groceries declined, but the movement was slow, and in the latter part of the year it was almost imperceptible. Building materials and chemicals fluctuated, but the general tendency was towards lower prices. In the group wool, cotton, etc., there was a rapid decline between January and May, then prices rose in each month until October, when a slow movement downwards became apparent. The general index of wholesale prices which reached a maximum in July, 1920, declined in each

subsequent month except in June, 1921, when increases occurred in several groups including wool and cotton, meat, and chemicals; in September, when the downward movement was arrested by another rise in the textile group; and in January, 1922, when prices of agricultural produce and meat increased.

The following statement gives a comparison of the index numbers of Australian products, and of imported goods, in each year since 1901 :—

Year.	Australian Products.	Imported Goods.	All Com- modities.	Year.	Australian Products.	Imported Goods.	All Com- modities.
1901	903	906	904	1912	1185	1023	1129
1902	1168	887	1072	1913	1113	1054	1092
1903	1110	912	1042	1914	1188	1041	1137
1904	901	929	911	1915	1532	1151	1401
1905	945	910	933	1916	1481	1509	1489
1906	955	955	955	1917	1580	2603	1727
1907	997	1008	1001	1918	1675	2438	1933
1908	1149	962	1085	1919	1993	2283	2090
1909	1045	955	1014	1920	2354	2799	2503
1910	991	1009	997	1921	1866	2136	1956
1911	1000	1000	1000				

The prices of Australian products vary, as a general rule, in accordance with local seasonal conditions, and the prices of imported goods in accordance with world conditions.

The sudden rises of the index numbers in 1902, 1908, and 1915, were due principally to bad seasons, which affected the prices of local products.

The price-level of Australian products declined slightly in 1916, when a good harvest was reaped, but imported goods rose by 32 per cent. In the following years local products increased in price, but the high index was due more to imported goods, which increased by 33 per cent. in 1917, and by 21 per cent. in 1918. After the end of the war these prices fell for a time, but the upward movement of the prices of local products continued. In 1920 the price-level of Australian products increased by 18 per cent., and of imported articles by 23 per cent. In 1921 there was a decrease of 21 per cent. in the index number of Australian commodities and of 24 per cent. in regard to imported, the former being 87 per cent. and the latter 113 per cent. higher than in 1911.

It is estimated that the commodities treated as of Australian origin in the above table represent 67 per cent. of the import trade of the State, and that those treated as imported goods represent 40 per cent. of the import trade; their combined export and import values constitute 55 per cent. of the total value of the overseas trade of New South Wales.

Omitting the years of severe drought it does not appear that either agricultural or dairy produce obtained the increase in prices that other commodities enjoyed. The prices realised for agricultural produce varied considerably between seasons, but in 1918, when the general index number was over 93 per cent. above the level of 1911, the corresponding increase for agricultural produce was only 38 per cent., and even the high prices realised in consequence of the severe drought of 1919-20 did not bring the index number for this group quite up to the general level.

In the case of dairy produce the index number was higher than the general index number during the years 1907 to 1913. Between 1914 and 1920 it was lower, falling farther and farther behind that of all commodities though in 1919 a rise of 15 per cent. occurred, and an advance of 29 per cent. in 1920. In 1921 a drop of 10 per cent. occurred, but in that year the index number of this group exceeded that of all commodities.

The following table shows the price-levels for the principal agricultural and dairy products included in this investigation for the years 1901 to 1921 :—

Year.	Wheat (Milling).	Flour.	Wheaten Chaff.	Oaten Hay.	Potatoes.	Butter (Prime).	Eggs (New Laid).
1901	771	743	869	860	914	997	963
1902	1257	1111	1242	1286	1189	1330	977
1903	1311	1411	1183	1053	718	1119	1070
1904	907	951	877	629	512	815	878
1905	974	938	968	697	1515	960	826
1906	937	892	916	754	1253	1008	791
1907	1100	1028	1084	915	662	999	917
1908	1223	1125	1585	1331	1050	1155	1048
1909	1357	1306	1116	881	1004	1031	1034
1910	1094	1145	1040	820	1162	1037	1019
1911	1000	1000	1000	1000	1000	1000	1000
1912	1167	1114	1407	1339	1551	1129	1098
1913	1029	1017	1101	1008	856	1023	1098
1914	1178	1109	1242	1030	849	1094	1045
1915	1601	1572	1770	1746	1337	1400	1189
1916	1381	1327	973	922	1420	1400	1183
1917	1356	1302	1005	1017	994	1541	1075
1918	1356	1307	1378	1316	1091	1576	1157
1919	1463	1329	2207	2110	2587	1812	1345
1920	2457	2182	2626	2529	2211	2342	1792
1921	2474	2277	1591	1609	1076	2033	1738

In 1921 the index number of agricultural produce dropped by 28 per cent. Wheat and flour were slightly in excess of the exceptionally high figure of the previous year. The high prices were due partly to the high prices ruling in overseas markets, and partly to a Government guarantee to the farmers of a minimum price. Other agricultural products showed a marked decrease owing to the good season; for instance, potatoes were sold at less than half the price in 1920, and chaff, hay, bran, pollard, and maize were much cheaper. In the dairy group butter and eggs, though dear, were somewhat cheaper than in 1920.

The index of meat has been higher in nearly every year than that of any other group, and in 1917 reached a point 200 per cent. above the 1911 level. The high index number is, however, in some measure due to the fact that low rates were ruling in 1911. The principal increases occurred in the years 1902, 1912, and 1915. A fall of 13 per cent. took place in 1918, during the latter part of which year prices were controlled by the Commonwealth Government; but this fall was inconsiderable in comparison with the prices then ruling. The further advance that accompanied the 1919-20 drought conditions brought the general level of meat prices to 211 per cent. above the 1911 level. In 1921 there was a decline of 38 per cent. and the prices were lower than in any year since 1914. The same fluctuations have not characterised the price movements of beef and mutton, as will appear from the following comparison of price-levels. From 1901 to 1911 the prices of mutton were nearer to those of the base year than were those of beef, but since 1911 the converse has been the experience :—

Commodity. (1911 = 1000)	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Beef ...	1333	1920	1588	1178	1017	1209	1265	1414	1189	1025
Mutton ...	1090	1650	1530	1415	1165	1135	1120	1225	910	960
Commodity. (1911 = 1000)	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Beef ...	1283	1321	1585	2762	3049	3027	2566	3033	3051	1744
Mutton ...	1438	1500	1875	2500	2813	3187	2813	2813	3350	2158

The unfavourable seasons in this period were 1902, 1912, 1915, and 1919. It will be observed that beef prices increased by 44 per cent. in 1902, but there was a fall of 17 per cent. in 1903, and the decline continued until in 1905 prices were 24 per cent. below the 1901 level; a sharp rise of 19 per cent. occurred in 1906, and another advance of 12 per cent. in 1908, but then prices fell steadily up to 1911, when the lowest point was reached. There was a recovery in 1912, when prices advanced 28 per cent., and this upward movement, accelerated by a rise of 74 per cent. in 1915, continued until in 1916 prices attained a level 200 per cent. above 1911 values, and with the exception that there was a fall of 14 per cent. in 1918, this was maintained until 1920. In the following year a decline of 43 per cent. occurred.

Mutton prices moved generally in the same direction as beef prices, but with even more violent fluctuations, and reached their lowest level in 1909 instead of 1911. There was a sharp rise of 52 per cent. in 1902, followed by a steady decline until 1907, when prices were only 3 per cent. above the 1901 level. A slight recovery took place in 1908, but in 1909 there was a heavy fall of 26 per cent. In the next year prices advanced, and the upward movement continued until 1917, when prices were more than three times as high as in 1911; there were advances of 44 per cent. in 1912, 24 per cent. in 1914, 33 per cent. in 1915, 12 per cent. in 1916, and 13 per cent. in 1917. In 1918 there was a decline to the 1916 level, which was maintained during 1919, but in 1920 there was an increase of 19 per cent. In 1921 there was a decrease equal to 36 per cent.

Cotton, wool, leather, and jute together were low in 1901, but rose although not regularly, by nearly 36 per cent. during the decennium 1901-11; the principal increases, 15 per cent. and 12 per cent., occurred in 1903 and 1906, and there were decreases of 8 per cent. and 12 per cent. in 1905 and 1908 respectively; after 1911 the index fluctuated near the 1911 level until 1915, and thereafter advanced rapidly to 1918. The principal rise occurred in 1917, with considerable increases in 1916 and 1918. In 1919 the index declined slightly, but in the following year a rise of 23 per cent. occurred, and the index number was more than three times as high as in 1914. The price movements in each of these commodities are shown in the following table:—

Commodity. (1911=1000)	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Cotton ... ..	675	688	857	938	723	845	930	813	899	1136
Wool ... ..	770	806	913	923	946	1025	1040	929	973	937
Leather ... ..	775	760	764	775	845	918	918	816	841	970
Jute ... ..	981	915	862	921	1121	1215	1246	1039	945	894

Commodity. (1911=1000)	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Cotton ... ..	916	996	911	834	1278	2356	3168	2791	3668	1484
Wool ... ..	984	1035	1041	1020	1424	1932	2183	2184	2267	1251
Leather ... ..	1006	1096	1142	1234	1344	1594	1586	2154	2875	1971
Jute ... ..	1471	1357	1310	1401	1785	1801	2321	2491	2857	1598

The price of raw cotton rose considerably from 1901 to 1911, and then exhibited a tendency to decline, which became accentuated in July, 1914, and the lowest point was reached by the end of the year. A very slow recovery was effected during 1915, in which year low prices ruled. Thereafter rapid advances were made until September, 1918, when there commenced a series of fluctuations tending downwards, and continuing until the following

September, when a further succession of rapid advances began, and in 1920 the index was 16 per cent. higher than in 1918. The greatest rise, 84 per cent., occurred between 1916 and 1917, while between 1915 and 1918 the prices almost quadrupled. In 1921 the price of cotton showed a drop of 60 per cent. and it was lower than in any of the previous five years at a level 48 per cent. above the 1911 price.

As a consequence of the purchase by the Imperial Government of Australian wool from November, 1916, and the resultant market control, it has not been found practicable to determine a satisfactory average commercial price for these years. Recourse, therefore, has been made to the average import value into Great Britain of Australian wool. This value rose in each year from 1901 to 1907; then a decline occurred, and the value fluctuated somewhat until 1915. In 1916 an advance of 40 per cent. is shown, and, as a result of the rising market, the Imperial purchase scheme was formulated. By its adoption prices were controlled, but values continued to rise until 1921, when a drop of 45 per cent. was recorded.

A fairly steady advance in leather was evident from 1901 to 1918, by which year prices had reached a point 59 per cent. above 1911 rates. A rise of 36 per cent. occurred in 1919, and of 33 per cent. in 1920, and a decrease of 31 per cent. in the following year.

The index number of jute goods, as shown by cornsacks, bran bags, and woolpacks, was comparatively higher in 1901 than the index numbers of the other commodities in this class, but they declined during the two succeeding years; from 1905 to 1908 they were higher than in 1911. In 1912 the prices rose by 47 per cent., and in the following years experienced a decline until 1915, when a continuous advance began, the principal rises taking place in 1916 and 1918. The prices in 1921 were 44 per cent. lower than in 1920.

With the exception of coal most of the articles in the fourth group are manufactured metals, which are largely imported. The prices of these commodities were generally higher in 1901 than in 1911, but the index number did not vary greatly until 1915, when a period of rapid increases began. The greatest general rise occurred in 1917, and a slight decline followed the close of the war. During the last two years pig-iron, which is produced locally, has risen in price, and it was dearer in 1921 than in any other year of the period under review. The prices of girder plates, galvanised iron and copper have dropped, but are still high in comparison with pre-war prices. The price of coal increased slowly during the decade 1901-10, and recovering from downward fluctuations between 1911 and 1913, rose rapidly until 1921, when it was 119 per cent. higher than in 1911. The price-levels of the more important items of this group are shown in the following table:—

Commodity. (1911=1000)	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Pig-iron (local) ..	1079	969	957	857	898	977	1066	1015	926	926
Girder-plate ...	1153	1135	1032	1007	1007	1007	1007	1007	1007	1007
Corrgtd. Gal. Iron	1041	1018	1013	993	1013	1102	1206	1089	1059	1032
Copper (Sheet) ...	1333	1317	1152	1024	1031	1246	1611	1492	1167	1000
Coal ...	844	844	928	940	934	922	934	958	982	982

Commodity. (1911=1000)	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Pig-iron (local) ...	1020	1033	1020	1250	2201	2296	1998	2074	2111	2331
Girder-plate ...	1028	1114	1149	1221	2177	4441	5998	3728	3028	2986
Corrgtd. Gal. Iron	1070	1082	1117	1581	2135	2904	3462	3279	3576	2825
Copper (Sheet) ...	1031	1095	1127	1286	2095	2841	3048	2731	2524	2429
Coal ...	982	970	1018	1066	1168	1383	1533	1670	1916	2190

The upward movement in the prices of building materials has been comparatively regular, but considerable advances took place during the years 1917 to 1920, the greatest increases being in glass, linseed oil, white-lead, and imported timbers. In 1921 there was a decline of 7 per cent. in this group; the prices of timber, except oregon pine, showed little variation, but glass, linseed oil, and white-lead were much cheaper. The following table of price-levels furnishes a comparison of the principal items included in the group:—

Commodity. (1911=1000)	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Local Hardwood..	700	700	837	834	789	811	832	894	917	902
Local Pine ...	669	669	731	759	768	774	894	961	965	965
N.Z. Pine ...	913	939	926	965	952	952	978	1023	972	959
Oregon Pine ...	801	801	881	836	735	951	988	919	833	929
Bricks ...	800	857	857	857	829	810	810	871	905	943

Commodity. (1911=1000)	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Local Hardwood..	1109	1151	1132	1119	1167	1312	1458	1776	2073	2089
Local Pine ...	1075	1102	1079	1071	1201	1311	1653	1842	2408	2441
N.Z. Pine ...	1094	1113	1119	1145	1214	1387	1694	1901	2726	2802
Oregon Pine ...	1103	1218	1160	1282	1526	1962	2545	2865	4113	3018
Bricks ...	1066	1071	1071	1071	1071	1166	1191	1252	1447	1619

During the whole period under review groceries have shown the smallest increases of any group, and in 1921 it was the only group which showed an increase as compared with the previous year. The index advanced but little until 1915, and manifested signs of decline from 1912 to 1914; in 1916 it rose by 13 per cent., with smaller increases in the two succeeding years. In 1920, however, there was a rise of 28 per cent., and a further rise in 1921 brought the index number to a level, 94 per cent. higher than in 1911. Comparing in each case with the year 1911, the increases in grocery prices occurred three years later than the general advance. Not until 1918 and 1919 did the grocery index number reach the position occupied by the index of all commodities in 1915 and 1916 respectively. The yearly price-levels of the more important commodities of the group are shown below:—

Commodity. (1911=1000)	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Sugar ...	1011	937	942	936	1036	947	904	951	973	1015
Tobacco ...	925	925	931	948	1000	1000	1000	1000	1000	1000
Tea ...	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Soap ...	791	830	859	863	873	873	916	955	952	957
Jam ...	1391	1306	1067	1083	1059	1048	937	988	1116	1028
Kerosene...	862	836	789	862	956	989	982	1006	1006	1017

Commodity. (1911 = 1000)	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Sugar ... ..	1078	1044	985	1063	1337	1337	1337	1337	2015	2240
Tobacco ... ..	1000	1000	1000	1076	1083	1168	1203	1349	1561	1638
Tea ... ..	1000	1000	1000	1139	1222	1222	1278	1420	1920	1852
Soap ... ..	1000	1000	1000	1000	1000	1132	1319	1513	1848	1568
Jam ... ..	1098	1146	1146	1186	1401	1345	1432	1480	1940	2086
Kerosene ... ..	1058	1114	1092	1138	1575	1851	2183	2299	2871	2848

*Comparison with Other Countries.*

The following statement shows the wholesale price index numbers for various parts of the British Empire and for the United States of America, with 1911 as common base, and affords an interesting comparison of the manner in which wholesale prices varied under the influence of war conditions:—

Year.	Sydney, New South Wales. [Bureau of Statistics.]	Melbourne, Victoria. [Common- wealth Bureau of Census and Statistics.]	New Zealand. [Census and Statistics Office.]	Canada. [Department of Labour.]	United Kingdom. [Board of Trade]	United States of America. [Bureau of Labour.]
Number of Commodities.	100	92	106	271	45-150	Variable. 234-346
1901	904	974	937	840	883	833
1902	1072	1051	981	856	881	840
1903	1042	1049	960	867	886	840
1904	911	890	928	874	898	906
1905	933	910	1000	893	892	840
1906	955	948	1022	942	921	927
1907	1001	1021	1022	991	969	989
1908	1085	1115	1012	949	941	958
1909	1014	993	956	956	952	1021
1910	997	1000	989	975	995	1052
1911	1000	1000	1000	1000	1000	1000
1912	1129	1170	1047	1055	1050	1062
1913	1092	1088	1038	1064	1065	1052
1914	1137	1149	1084	1068	1071	1052
1915	1401	1604	1277	1162	1315	1063
1916	1489	1504	1388	1429	1705	1304
1917	1727	1662	1564	1860	2220	1852
1918	1933	1934	1820	2185	2443	2062
1919	2090	2055	1845	2302	2708	2230
1920	2503	2480	2198	2657	3395	2567
1921	1956	1903	2084	1933	2175	1631



Prices had been increasing steadily in all countries for many years before the war, and the effect of the war on prices was less marked in the countries more remote from the centre of conflict; in every case there has been a general increase in prices since the cessation of hostilities. In Great Britain prices attained twice their 1911 level in 1917, in America and Canada in 1918, while in Australia this did not occur until 1919, and in New Zealand until 1920. From 1911 to 1915 wholesale prices advanced more slowly outside Australia than within, and, with the exception of the United Kingdom, this was the case also in 1916. In 1917 and following years all countries, except New Zealand, show a greater increase in prices than Australia.

The upward movement of prices continued everywhere throughout 1919 and during the early months of 1920. The first indication of falling prices was in France, where a decline commenced in May, 1920; subsequently the downward course of prices was fairly constant until in June, 1921, the index number was 44 per cent. below the level of April, 1920. There was a slight recovery during the latter part of the year, then prices fell again; in April, 1922, the index number was 47 per cent. lower than it was two years earlier. In June, 1920, prices in the United States began to fall a little; towards the end of the year the decline became more rapid, and by December it had amounted to 30 per cent. In the following year the fall was continuous but slower, and the level in June, 1921, was 46 per cent. below the high level of May, 1920.

In the United Kingdom there was a slight fall in June, 1920, and a period of rapid decline began in September. The general level of prices fell by over 34 per cent. in the succeeding seven months; then the prices fell slowly until April, 1922, when the index number was 50 per cent. lower than the maximum of May, 1920. In Canada prices reached their highest point in May, 1920, when they were 175 per cent. above July, 1914, since then they have declined steadily; in April, 1922, they were 37 per cent. below May, 1920, and 67 per cent. above July, 1914.

In New South Wales prices attained their maximum height in July, 1920, in August and September they declined slowly, and in October a fall of 7 per cent. occurred; there was a very slight decline in November, and the trend has been steadily downward, so that in May, 1921, prices were 39 per cent. below those of July, 1920. During the succeeding four months the index number fluctuated somewhat but a further fall of 10 per cent. occurred before the end of the year. The fall was not evident in Victoria until September, 1920, but once begun, the movement was more rapid, and the fall greater, with the result that in March, 1921, prices were 25 per cent. lower than in August, 1920. In New Zealand the decline did not set in until November, 1920, and up to April, 1922, there had been a fall of 19 per cent. only.

The marked difference between the index numbers of Sydney and Melbourne in 1915 was due largely to seasonal causes. The price-level of agricultural produce rose in that year to 2162 in Melbourne, while in Sydney it was 1655.

#### RETAIL PRICES.

The following table shows the average retail prices in Sydney of various commodities at intervals since 1901. The quotations are based on the prices charged in the shops in the metropolitan district, and represent the mean of the monthly prices during each year.

The table is useful for comparative purposes in regard to the measurement of the general change in prices, but the figures do not disclose a

most interesting feature in a history of prices, namely, the fluctuations during the year, which are pronounced, especially in the case of perishable produce. For such information readers are referred to the "N.S.W. Statistical Register," where the average monthly prices are shown. The averages for each year from 1901 to 1920 are shown in the 1919-20 issue of the "Statistical Register of New South Wales."

Commodity.			1901.	1903.	1906.	1908.	1911.	1913.	1916.	1918.	1920.	1921.
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bread .. ..	2lb. loaf		0 2 5	0 3 5	0 3 0	0 3 3	0 3 5	0 3 5	0 4 0	0 4 0	0 5 9	0 6 2
Flour .. ..	25lb.		1 11 0	3 4 0	2 6 0	3 0 6	2 9 0	2 10 0	3 6 1	3 7 4	6 0 4	6 1 6
Tea .. ..	lb.		1 3 0	1 3 0	1 3 0	1 3 0	1 3 5	1 3 8	1 6 1	1 6 7	2 4 5	1 10 7
Coffee .. ..	"		1 5 0	1 5 0	1 5 0	1 5 0	1 5 0	1 5 5	1 6 0	1 6 1	2 2 6	1 11 6
Sugar .. ..	"		0 2 3	0 2 5	0 2 5	0 2 5	0 2 7	0 2 7	0 3 5	0 3 5	0 5 4	0 5 7
Rice .. ..	"		0 2 5	0 3 0	0 2 5	0 2 5	0 2 7	0 3 0	0 3 2	0 3 4	0 7 4	0 4 9
Sago .. ..	"		0 2 5	0 3 0	0 3 7	0 3 7	0 2 7	0 2 7	0 3 2	0 4 7	0 5 6	0 8 6
Jam (Australian) .. ..	"		0 4 0	0 4 5	0 4 5	0 4 2	0 4 4	0 5 0	0 6 0	0 5 7	0 9 1	0 10 0
Oatmeal .. ..	5 lb.		0 11 3	1 0 5	1 0 5	1 3 0	1 0 5	1 2 3	1 2 6	1 5 6	2 2 1	1 8 0
Raisins .. ..	lb.		0 6 2	0 7 0	0 5 3	0 7 2	0 6 2	0 6 4	0 7 7	0 8 2	0 10 7	0 11 5
Currants .. ..	"		0 6 6	0 5 6	0 5 9	0 6 6	0 7 0	0 7 2	0 9 1	0 8 6	0 11 0	0 11 1
Starch .. ..	"		0 4 0	0 5 0	0 5 0	0 5 0	0 5 5	0 5 4	0 6 4	0 6 9	0 10 2	0 9 7
Blue .. ..	12 squares		0 9 0	0 9 0	0 9 0	0 9 0	0 9 0	0 9 0	0 9 2	1 3 6	1 5 0	1 4 7
Candles .. ..	lb.		0 5 5	0 5 5	0 6 5	0 6 5	0 6 5	0 6 5	0 8 0	0 10 4	1 2 2	1 1 0
Soap .. ..	"		0 2 5	0 3 0	0 3 0	0 3 0	0 3 0	0 3 3	0 3 4	0 4 4	0 7 0	0 5 0
Potatoes .. ..	14 lb.		0 11 3	0 8 3	1 3 8	0 10 9	1 0 2	1 0 8	1 6 5	1 5 2	2 2 5	1 4 5
Onions .. ..	lb.		0 1 4	0 0 6	0 1 0	0 1 2	0 0 7	0 1 3	0 1 1	0 2 8	0 3 0	0 1 5
Kerosene .. ..	gal.		0 10 1	0 10 1	0 10 8	0 11 1	0 11 1	1 0 2	1 6 7	2 2 7	2 8 6	2 10 9
Milk .. ..	quart		0 4 0	0 4 5	0 4 0	0 5 0	0 4 4	0 5 2	0 5 5	0 6 0	0 7 9	0 8 2
Butter .. ..	lb.		1 0 2	1 2 0	1 1 2	1 3 5	1 1 7	1 1 8	1 5 3	1 7 0	2 4 4	2 0 7
Cheese .. ..	"		0 7 5	0 9 0	0 8 0	0 10 0	0 8 7	0 9 5	1 0 1	1 1 3	1 5 5	1 3 9
Eggs, Fresh .. ..	doz.		1 3 0	1 6 0	1 1 0	1 3 0	1 3 5	1 5 1	1 6 4	1 5 8	2 6 9	2 6 5
Bacon, Middle Cut .. ..	lb.		0 9 0	0 11 0	0 9 5	0 11 5	0 10 5	1 0 7	1 4 5	1 4 5	1 11 9	1 10 9
Shoulder .. ..	"		0 6 5	0 7 5	0 8 0	0 7 0	0 7 0	0 8 7	1 0 4	0 11 5	1 6 1	1 4 5
Ham .. ..	"		0 11 0	1 0 5	0 11 5	1 1 5	1 1 0	1 2 0	1 5 5	1 5 9	2 2 0	2 0 9
Beef, Sirloin .. ..	"		0 4 5	0 5 0	0 4 5	0 5 0	0 4 5	0 5 0	0 11 1	0 10 2	0 11 5	0 9 1
Ribs .. ..	"		0 3 8	0 4 0	0 3 8	0 4 2	0 3 8	0 4 5	0 9 5	0 9 2	0 9 9	0 6 7
Gravy .. ..	"		0 2 0	0 3 5	0 3 0	0 3 2	0 3 0	0 3 5	0 7 6	0 7 2	0 7 2	0 4 8
Steak, Rump .. ..	"		0 7 0	0 7 5	0 7 0	0 7 5	0 7 0	0 7 9	1 1 8	1 2 8	1 4 9	1 2 0
Shoulder .. ..	"		0 3 5	0 4 0	0 3 5	0 3 8	0 3 5	0 3 5	0 8 5	0 8 8	0 10 1	0 6 9
Beef, Corned Round .. ..	"		0 4 0	0 4 5	0 4 0	0 4 2	0 4 0	0 4 4	0 9 6	0 9 0	0 10 2	0 8 1
Mutton, Leg .. ..	"		0 3 2	0 4 0	0 3 2	0 3 5	0 3 0	0 3 8	0 7 8	0 7 8	0 8 8	0 6 9
Shoulder .. ..	"		0 2 8	0 3 5	0 2 8	0 3 0	0 2 5	0 3 1	0 6 7	0 6 8	0 7 2	0 5 2
Loin .. ..	"		0 3 8	0 4 5	0 3 8	0 4 0	0 3 8	0 4 0	0 7 9	0 8 4	0 9 3	0 7 6
Neck .. ..	"		0 3 2	0 3 5	0 3 0	0 3 2	0 3 0	0 3 5	0 7 0	0 6 9	0 7 4	0 5 4
Chops, Loin .. ..	"		0 4 2	0 5 0	0 4 2	0 4 5	0 4 0	0 4 7	0 9 0	0 10 0	0 10 5	0 8 6
Leg .. ..	"		0 3 8	0 4 5	0 3 8	0 4 0	0 3 8	0 4 7	0 8 6	0 9 1	0 10 0	0 8 1
Neck .. ..	"		0 3 2	0 4 0	0 3 2	0 3 5	0 3 0	0 4 0	0 7 3	0 6 8	0 8 3	0 6 4
Pork, Leg .. ..	"		0 6 2	0 6 0	0 6 0	0 7 0	0 7 8	0 8 5	1 0 1	1 1 3	1 5 4	1 3 4
Chops .. ..	"		0 6 8	0 6 5	0 6 5	0 7 8	0 8 5	0 9 0	1 0 1	1 2 6	1 6 0	1 5 8

The annual average of the retail prices of most food commodities reached a maximum in 1920, and prices in the following year were much lower; there were, however, exceptions including the prices of commodities which are amongst the most important articles of diet, viz., bread, flour, sugar, jam, and milk.

#### HOUSE RENTS.

The average householder with a moderate income spends a considerable portion of his income on rent; any fluctuation in rents therefore affects largely the cost of living. Information as to the predominant rents of houses in Sydney and suburbs since 1863 has been obtained from newspapers and other sources, and the average rentals, according to the size of the houses, have been computed; details for each year from 1865 to 1920 are published in the "Statistical Register, 1919-20."

The table below shows the average amounts paid by tenants of various types of houses in Sydney and suburbs in 1901 and later years. The figures represent the average predominant rents paid for each class of house; the range of rents varies considerably according to locality,

position, and class of building, proximity and means of speedy transport to the city being important factors in respect to rents in the suburbs.

Year.	Under Four Rooms.	Four Rooms.	Five Rooms.	Six Rooms.	Seven Rooms.	Over Seven Rooms.	Weighted Average.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901	9 0	11 1	13 7	15 4	19 1	22 2	13 5
1906	9 2	11 7	14 0	16 9	19 1	22 6	13 11
1911	11 4	14 5	17 1	20 2	23 3	26 10	17 0
1912	11 2	13 2	17 2	20 5	25 1	31 5	18 5
1913	11 9	14 3	18 6	21 9	26 0	31 1	19 6
1914	12 4	15 5	18 7	22 0	26 5	31 8	20 0
1915	12 2	14 6	18 0	20 10	25 0	29 10	19 0
1916	12 3	14 8	17 11	20 6	24 6	29 8	18 11
1917	12 3	14 9	17 10	20 11	24 6	29 4	19 0
1918	12 6	15 4	18 6	21 9	24 11	29 7	19 6
1919	12 8	15 9	18 11	22 5	25 8	31 2	20 1
1920	13 10	17 8	20 8	24 3	28 4	34 3	22 1
1921	14 2	18 5	21 7	25 2	29 7	35 9	23 0

NOTE.—Kitchen is included as a room.

Between 1901 and 1914 rents in Sydney and suburbs increased by nearly 50 per cent., but the war had a steadying effect, and the next three years showed a slight decrease. Regulations were issued by the Commonwealth Government under the War Precautions Act, prohibiting any increase in the rent of a house occupied by a member of the Expeditionary Forces, or by a parent or female dependent of a member, except by leave of a competent Court. These regulations and the operations of the Fair Rents Court in Sydney tended to keep rents from rising above pre-war level.

In 1918, however, the rents increased, and the upward movement has since been continuous, owing to an increasing shortage of houses, the deficiency being attributed to the practical cessation of investment building, on account of the high price of both materials and labour. In 1920 there was a marked increase in building activities, but the supply was still short of the demand, and there was a rise of 10 per cent. in the average rental during the year. In 1921 there was a further rise of 4 per cent., and the average was 15 per cent. higher than in 1914. It is estimated that at the end of the year 1921 the shortage of houses in Sydney was about 15,000.

#### *Cost of Building.*

The following comparison shows the cost of building in Sydney, in various years since 1901, a plain brick cottage with 4 rooms, kitchen, bathroom, pantry, and back and front verandahs, complete with bath, laundry fittings, gas stove, fencing, water and sewerage. No allowance has been made for the builder's profit, and the cost of the land has not been included. The comparison is based on the assumption that the quantity of materials and of labour, as in the month of July, was equal in each year, except that in 1921 and 1922 the estimates are based on the prices and rates ruling in the month of June.

Year.	Cost of—			Proportion of Total Cost.		Index-number of Cost. 1911=1,000.		
	Materials.	Labour.	Total.	Materials.	Labour.	Materials.	Labour.	Total.
	£	£	£	per cent.	per cent.			
1901 ..	181	100	281	64	36	797	833	810
1911 ...	227	120	347	65	35	1000	1000	1000
1914 ...	255	133	388	66	34	1123	1108	1118
1920 ...	483	221	704	69	31	2128	1842	2029
1921 ...	482	225	707	68	32	2123	1875	2037
1922 ...	449	220	669	67	33	1978	1833	1928

Between 1901 and 1911 there was an increase of 23 per cent. in the cost of building, with a further rise of 18 per cent. during the succeeding three years. In 1920 the cost was 81 per cent. above pre-war level, and it was slightly higher in the following year, then a decrease of about 5 per cent. occurred. The cost of materials increased more than wages until 1920; since that year materials have become cheaper, but the wages cost in June, 1922, was about the same as it was two years ago.

Particulars are given in the chapter relating to Social Condition concerning the number of new buildings erected and schemes for assisting people to build dwellings.

#### *Fair Rents Court.*

A measure of regulation of house rents is provided by the Fair Rents Act, passed in December, 1915, and amended in 1920. The Act provides for the determination of rents of dwellings leased for a term not exceeding three years at a rental not exceeding £156 per annum, but it does not apply to houses ordinarily leased for summer residence.

The operations of the Fair Rents Act may be applied to any localities proclaimed by the Governor; up to 16th August, 1920, it had been proclaimed in the metropolitan area only, but on that date its provisions were extended to the country police districts. The Act is administered by Fair Rents Courts, consisting of a Stipendiary or Police Magistrate. Applications to the Court for the determination of the fair rent of a dwelling may be made by the lessor, or by the lessee, if he has paid all rent due under the lease or satisfies the Court that non-payment is justifiable, notwithstanding that he has received notice to terminate the tenancy.

In order to determine the fair rent, the Court must ascertain the capital value of the dwelling, which is the unimproved capital value of the land plus the estimated cost of erection as at the date of the application, less a fair sum for depreciation.

The fair rent is fixed on the capital value at a rate not less than that charged on overdrafts by the Commonwealth Bank of Australia, and not more than  $2\frac{1}{2}$  per cent. above such amount, plus rates, taxes, repairs, maintenance, insurance, and depreciation. But, excepting where circumstances which render an increase equitable are proved, the fair rent may not exceed the rent which was charged for the dwelling on 1st January, 1915.

The determinations of the Court take effect fourteen days after decision and remain in force for a period not less than twelve months and not longer than three years, as specifically stated; if no special period be mentioned the duration is three years. A determination while in force applies to any lease of the dwelling, notwithstanding change of ownership or tenancy, and during the pendency of an application or the period of six months after decision, the lessor may not determine the lease without reasonable cause if the lessee performs the conditions of his lease.

Under new sections added to the Act in 1920 a penalty may be imposed on any person who gives or receives or offers a bonus in consideration of the grant or acceptance or renewal of a lease, or who makes it a condition of the granting of a lease that the lessee shall purchase furniture or pay for obtaining the key of a house. A fine not exceeding £50 may be imposed for refusal to let a house to a respectable and responsible applicant who has children.

The first sitting of the Fair Rents Court in Sydney was held on the 13th March, 1916. Particulars of cases determined by the Court are shown in the following tables, but for several reasons they cannot be regarded as a satisfactory basis for conclusions as to the effect of the Fair Rents Act upon house rents. For instance, in cases where the tenant applies promptly upon receiving notice of the landlord's intention to increase the rent, the

"fair rent" as determined by the Court may be recorded as an increase on the rent at date of application, whereas it is a reduction in comparison with the proposed increased rental against which the action was directed.

The number of applications in the Metropolitan district dealt with during the six years ended 31st March, 1922, are shown in the following statement. The figures are exclusive of 95 cases determined in the country Courts :—

Particulars.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total.
Cases withdrawn or struck out.	141	53	100	225	439	478	1,436
Rent fixed as at date of application.	137	49	36	47	52	75	396
„ Increased ...	7	19	132	254	256	237	905
„ Decreased ...	294	102	65	141	187	245	1,034
Total...	579	223	333	667	934	1,035	3,771

In the country districts only 95 cases were dealt with by the Fair Rents Courts from 16th August, 1920, to the end of the year 1921; 41 were withdrawn, and in 17 cases the rent was fixed as at date of application; in 15 it was reduced, and in 22 increased.

In the Metropolitan district the majority of dwellings affected by the decisions of the Court were small, and the rents did not exceed £1 5s. per week. The average of the rentals reviewed in the year ended March, 1922, was 25s. 3d. per week as compared with 19s. 2d. in 1916-17, 18s. 7d. in the following year, 19s. 11d. in 1918-19, 21s. in 1919-20, 23s. in 1920-21. With few exceptions, the period of adjustment was twelve months. In the following statement the figures relating to the Metropolitan district are shown for the year 1921-22, and for the period of six years since the commencement of the Act :—

Rent (at date of Application).	Year ended 31st March, 1922.				Total to 31st March, 1922.			
	Fixed as at date of Appl'n.	Increased.	Reduced.	Total.	Fixed as at date of Appl'n.	Increased.	Reduced.	Total.
10s. and under ...	...	8	2	10	11	14	15	40
10s. 6d. to 12s. 6d.	7	14	4	25	22	47	55	124
13s. to 15s. ...	7	22	11	40	58	105	186	349
15s. 6d. to 17s. 6d.	7	39	22	68	56	146	163	365
18s. to 20s. ...	14	27	16	57	91	155	148	394
20s. 6d. to 25s. ...	15	77	59	151	83	273	198	554
25s. 6d. to 30s. ...	11	35	58	104	40	118	112	270
30s. 6d. to 40s. ...	8	11	44	63	20	38	98	156
40s. 6d. to 50s. ...	...	4	20	24	9	9	40	58
50s. 6d. to 60s. ...	6	...	6	12	6	...	16	22
60s. 6d. to 70s. ...	...	...	3	3	...	...	3	3
Total ..	75	237	245	557	396	905	1,034	2,335

During 1921-22 the Court granted increases in 43 per cent. of the decisions, and reductions in 44 per cent.; the total increases to 31st March, 1922, represented 39 per cent., and the total reductions 44 per cent.

The amount of reduction and of increase in the rents of dwellings in the metropolitan district during the year 1921-22 may be seen in the following statement:—

Amount of Reduction, or of Increase.	Rents Increased.	Rents Reduced.	Amount of Reduction, or of Increase.	Rents Increased.	Rents Reduced.
6d. and under.	41	23	3s. and under 3s. 6d.	27	18
1s.    ,,    1s. 6d.	30	27	3s. 6d.    ,,    4s.	11	17
1s. 6d.    ,,    2s.	36	16	4s.        ,,    5s.	8	19
2s.        ,,    2s. 6d.	20	18	5s. and over    ...	35	85
2s. 6d.    ,,    3s.	29	22	Total        ...	237	245

The reductions amounted to a sum of £55 13s. 6d. per week, which represents an average of 15·7 per cent., or 4s. 6d. per house per week. In 237 cases the rents were increased, the total increases amounting to £33 14s. 6d. per week, equal to 13 per cent., or 2s. 10d. per house.

The weekly rents reviewed by the Court during 1921-22 amounted to a sum of £703 9s., the net reduction being £21 19s., or 3·1 per cent.

#### RETAIL PRICE INDEX NUMBERS—FOOD AND RENT.

The index numbers of the prices of food and of rent shown in this section should not be used as a complete measure of variations in the cost of living, as they were compiled with the primary object of showing the general movement of the retail prices of food and of rent, and do not cover other items of family expenditure. In measuring a movement in prices over a period of years, changes in dietary each year cannot be taken into account in computing the index numbers; the price of each food commodity must be weighted over a series of years in accordance with its relative importance in a fixed regimen as determined in or around the basic year. In reviewing prices over a long period there is a probability of a discrepancy between the rise or fall of the index numbers and the increase or decrease in the actual expenditure of a household on food. During abnormal years, such as during war, when violent fluctuations in prices and supplies necessitate changes in the kinds, quality, and relative quantities of the various foods, and an adjustment of the family dietary, the discrepancy is likely to be wider than under normal conditions. The result of a changed as compared with a fixed regimen is shown on page 540.

The following table shows the variations, measured by index numbers, in retail prices of food and groceries and in rent, in Sydney, in each month since January, 1913, in comparison with July, 1914, the month before the outbreak of war. The index numbers of food and groceries were determined from the prices of 40 commodities in everyday use, the articles being as shown in the table on page 529. The prices in July, 1914, weighted according to the average consumption in the years 1906-10 of the various commodities, were called 1000, and related to the prices, similarly weighted,

in the other months. Information regarding rent is obtained quarterly, and the monthly figures were interpolated after assuming that the average rent for the quarter was the rent for the middle month of the quarter.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Food and Groceries.												
1913	937	954	970	962	943	958	953	939	938	932	935	933
1914	953	984	1017	1007	1000	1003	1000	998	985	981	967	1027
1915	1040	1040	1057	1082	1119	1175	1269	1391	1332	1338	1273	1300
1916	1288	1328	1313	1293	1310	1313	1336	1316	1316	1306	1316	1310
1917	1313	1338	1343	1348	1324	1316	1321	1381	1410	1405	1377	1359
1918	1372	1376	1362	1352	1362	1351	1343	1311	1328	1368	1397	1426
1919	1470	1494	1512	1507	1519	1523	1529	1534	1518	1585	1639	1634
1920	1651	1698	1708	1812	1831	1912	1961	1963	2014	1920	1885	1858
1921	1852	1839	1760	1686	1649	1624	1629	1618	1608	1577	1557	1591
1922	1484	1461	1460	1482	1503	1498						
Rent.												
1913	946	946	946	971	971	971	971	971	971	992	992	992
1914	992	992	996	1000	1000	1000	1000	1000	1000	1000	988	975
1915	959	954	950	946	946	946	946	946	946	946	942	938
1916	938	938	938	942	942	942	942	942	942	942	942	942
1917	942	942	942	942	942	942	942	942	942	946	950	954
1918	959	963	967	975	975	975	971	971	971	975	979	983
1919	988	988	988	988	992	996	1000	1004	1008	1012	1021	1029
1920	1046	1062	1079	1104	1104	1104	1100	1100	1100	1133	1133	1133
1921	1137	1137	1137	1137	1137	1141	1145	1149	1154	1154	1158	1162
1922	1170	1174	1178	1185	1191	1197						
Food and Rent combined.												
1913	941	950	959	966	956	964	961	953	953	960	961	960
1914	971	987	1007	1004	1000	1001	1000	999	992	990	977	1003
1915	1008	1001	1008	1020	1040	1071	1121	1188	1156	1159	1122	1134
1916	1128	1148	1142	1133	1142	1144	1156	1145	1145	1140	1145	1142
1917	1144	1157	1169	1163	1050	1145	1148	1180	1196	1196	1182	1174
1918	1183	1187	1181	1180	1185	1179	1173	1155	1165	1189	1206	1224
1919	1250	1263	1273	1270	1278	1282	1288	1292	1286	1324	1357	1358
1920	1374	1408	1421	1489	1499	1543	1570	1569	1597	1566	1542	1527
1921	1525	1518	1475	1435	1415	1404	1408	1404	1401	1388	1374	1346
1922	1341	1330	1331	1346	1360	1361						

From the above table it will be seen that the effects of war were not felt by housekeepers until early in 1915. In that year the price-level of food rose from 1040 in February to 1391 in August, then declined gradually to 1300 in December, and it is remarkable that throughout 1916 the prices showed very little variation, so that in December they were at practically the same level as at the end of the previous year. In 1917 the price level remained fairly constant until it rose in August and in September to 1410, while a decline to 1359 occurred during the last two months of the year. During 1918 the prices did not vary greatly until the latter half of the year, when a decline in July and August brought them back to the level of December, 1916. Then a steady rise commenced and continued until in December, 1919, the prices were 63 per cent. above the pre-war level. During 1920 the upward movement was accelerated, and the highest point was reached in September, 1920, viz., 101 per cent. above July, 1914. Subsequently the prices of food declined in each month until in March, 1922, they were lower than in February, 1919.

Rents were not affected immediately by the outbreak of the war, but they began to decline slowly in November, 1914, reaching the lowest point at the end of 1915, when they were about 6 per cent. lower than in July, 1914.

For two years there was only slight variation, then they commenced to rise, but did not regain the pre-war level until July, 1919. Since that month there has been a gradual increase, amounting in June, 1922, to nearly 20 per cent.

The index number for food and rent combined rose by 59·7 per cent. between July, 1914, and September, 1920, and then declined. An increase of 34 per cent. occurred in the twenty-two months after the signing of the armistice, though the rise during the fifty months of war was less than 20 per cent.

*Comparison with other Countries.*

The following statement shows the extent to which the war affected the retail prices of the principal articles of food in other countries; the particulars for the Australian States relate to the capital cities. The figures for the oversea countries have been taken from the "London Labour Gazette" and other official sources; those relating to France and to Sweden include fuel and lighting:—

Country.	Percentage Increases in Retail Food Prices since July, 1914.							
	July, 1915.	July, 1916.	July, 1917.	July, 1918.	July, 1919.	July, 1920.	July, 1921.	May, 1922.
New South Wales ...	27	34	32	34	53	96	63	50
Victoria ...	46	34	29	33	44	108	68	51
Queensland ...	35	29	31	41	63	99	67	51
South Australia ...	31	24	12	25	36	92	48	45
Western Australia ...	16	20	13	11	42	63	50	37
Tasmania ...	24	25	24	34	40	84	68	51
Australia ...	31	30	26	31	47	94	61	47
New Zealand... ..	12	19	27	39	44	67	64	44 Apl.
South Africa ... ..	7	16	28	34	39	97	39	19 Mar.
Holland (Amsterdam) ...	...	...	42	76	110	117	85	48 Mar.
United States ... ..	(-) 2	9	43	64	86	115	45	36 Mar.
Canada ... ..	5	14	57	75	86	127	48	38 Apl.
United Kingdom ... ..	32	61	104	110	109	158	120	73 Apl.
Denmark ... ..	28	46	66	87	112	153	136	97 Jan.
Sweden ... ..	24	42	81	168	210	197	132	85 Mar.
Norway ... ..	—	60	114*	179	189	219	195	138 Mar.
Italy (Rome)... ..	(-) 5	11	37	103	106	218	302	363 Feb.
France (Paris) ... ..	22	32	83	106	161	273	206	204 Apl.
Germany ... ..	...	...	...	...	...	1056	1174	3052 Mar.

\* June.



In Sydney, after a long and unbroken period of rising values, retail prices of food and groceries began to move downward after September, 1920, when they were 101 per cent. above July, 1914, prices, and fell steadily month by month, until in March, 1922, they were only 46 per cent. above the July, 1914, level; a slight rise occurred in April and May. In the other Australian capitals, except Perth, the movement was similar to that in Sydney, though in Melbourne the increase over pre-war prices was greater, and in Brisbane and Adelaide the maximum was reached a few months earlier. In Perth, the rise over pre-war level was not so great as in the other cities; the highest level was reached in July, 1920, then it declined, but before the end of the year a rise occurred, and in the four months January to April, 1921, the prices were almost as high as in July, 1920. In the latter part of 1921 there was a marked fall, but in 1922 the upward tendency became apparent again. In New Zealand, also, the movement at first was uncertain, as, although retail prices in November, 1920, showed a slight reduction, in December they increased, only to fall again in January, 1921. Subsequently there was a decline in each month until April, 1922, when the index number was 44 per cent. above the July, 1914, level.

Elsewhere in the Empire the movement was downward. For example, in the United Kingdom retail food prices did not weaken until December; in November they had reached a point 191 per cent. higher than in July, 1914; and, even after a steady decline during four months, they were still 118 per cent. higher in June, 1921. Then a slight rise occurred, but it was followed by a steady fall, and in April, 1922, they were 73 per cent. higher than in July, 1914. In Canada retail prices began to fall in July, 1920, when they were 127 per cent. higher than in July, 1914, and continued to decline until in June, 1922, they were 48 per cent. above that level. A rise occurred during July and August when the downward movement recommenced, and in April, 1922, prices were 38 per cent. above pre-war level. In South Africa the decline commenced in October, 1920, and in March, 1922, retail prices had fallen to a point 19 per cent. above the July, 1914, level.

As regards other countries, in the United States prices, after being stationary in July, 1921, at a point 115 per cent. above the July, 1914, level, declined persistently until in March, 1922, they were only 36 per cent. higher than in July, 1914. In Paris no reduction was apparent until after November, 1920, when prices were 326 per cent. higher than in July, 1914; in eight months there was a fall to a level in July, 1921, 206 per cent. above that of July, 1914. Prices rose in the succeeding three months, then declined slowly, and in April, 1922, the index number was about the same as in July of the previous year. In Sweden retail prices were at their highest—239 per cent. above July, 1914—in January, 1921, and then fell steadily until in March, 1922, they were 85 points above the July, 1914, level. In Italy (Rome), prices continued to rise throughout 1920; and, although there was a slight fall in January, 1921, there was a further increase, and in April, 1921, they were 332 per cent. above the July, 1914, level. A sharp decline in the succeeding three months was followed by another rise, and in February, 1922, they were 363 per cent. above pre-war level. Information relating to the movement of prices in Germany during the war period is not available. After the war food prices were nearly eleven times as high as in July, 1914. They remained at this level until June, 1921, when a rapid rise commenced, and the index number rose by 174 per cent. in ten months, so that in March, 1922, it was over thirty times greater than before the war.

*Retail Price Index Numbers—1901 to 1921.*

In the 1920 issue of the "Year Book," retail price index numbers from 1864 to 1920 are published, with a brief review of industrial conditions during the period; the following table shows the index numbers of food and groceries, and of rent, and of food and rent combined in each year since 1901:—

Year.	Index Numbers (1911=1000.) <sup>b</sup>			Amount required in each period to purchase the same quantities of Food and Rent as would have cost, on the average, 20s. in 1911.
	Food and Groceries.	Rent.	Food and Rent Combined.	
1901 ... ..	896	789	848	s. d. 17 0
1902 ... ..	1033	784	921	18 5
1903 ... ..	1020	784	914	18 3
1904 ... ..	902	794	854	17 1
1905 ... ..	970	814	900	18 0
1906 ... ..	967	819	901	18 0
1907 ... ..	936	838	892	17 10
1908 ... ..	1035	848	951	19 0
1909 ... ..	1015	878	954	19 1
1910 ... ..	991	907	953	19 1
1911 ... ..	1000	1000	1000	20 0
1912 ... ..	1142	1083	1116	22 4
1913 ... ..	1084	1147	1112	22 3
1914 ... ..	1138	1177	1155	23 1
1915 ... ..	1377	1118	1260	25 2
1916 ... ..	1503	1113	1328	26 7
1917 ... ..	1550	1118	1356	27 1
1918 ... ..	1560	1147	1375	27 6
1919 ... ..	1763	1181	1502	30 0
1920 ... ..	2121	1299	1752	35 0
1921 ... ..	1899	1353	1654	33 1

Prices of food are affected largely by seasonal conditions, but, even before the war, the trend of prices was generally upwards, and when a marked rise occurred as a result of a bad season, *e.g.*, in 1902 and in 1908, prices did not fall to the former level with the return of good seasons. This rise in prices was a world-wide movement which cannot be ascribed to local causes. Rents also rose steadily during the period of prosperity which preceded the war. In 1914 and subsequent years, drought, enlistments, and disorganisation due to the war steadily reduced the productive activity of the

population. Prices rose abnormally on account of a strong demand for raw materials oversea, and of a scarcity of manufactured goods. Unseasonable conditions existed from 1918 to June, 1920, and the year 1920 marked the beginning of a general process of deflation. In 1921 a favourable season was experienced and the wheat harvest was marketed at a high price, but the effects of world-wide commercial and industrial depression were apparent, causing unemployment in many industries. A drop occurred in the prices of food and groceries, and the index number declined by 10 per cent., rents continued to rise, and the cost of food and rent combined was 6 per cent. lower than in the previous year.

### COST OF LIVING.

For the purpose of measuring the extent of variations in the cost of living it is usual to distribute the expenditure of a family into five main classes, viz., food and groceries, rent, fuel and light, clothing, and miscellaneous items. Having ascertained the rise or fall in respect of each class it is important to determine with reasonable accuracy the weight to be assigned to each group for the purpose of calculating the increase or decrease in the general cost of living. The weight varies in accordance with the amount of income, the expenditure on the primal necessities of food and shelter being proportionately greater when the income is small. As however, the question of the cost of living is studied largely in relation to wages, and the standard of living, in respect of persons of moderate means, it is customary to consider the ratio of the component groups of expenditure on a basis of the wage of an unskilled worker.

In New South Wales the standard is based on the living wage determinations of the Board of Trade, which are discussed in detail in the chapter "Employment and Production," and need not be repeated here. It is interesting to compare the distribution of the expenditure of a worker's family, according to this official standard, with the standards adopted in other countries.

Expenditure Group.	Sydney Living Wage (Board of Trade), Oct., 1919.	Sydney Cost of Living (Basic Wage Commission, Nov., 1920).	United States. Cost of Living Inquiry (National Conference Board), 1919.	Canada, 1918, (based on pre-war Budget).	United Kingdom, 1920. (based on pre-war standard).
	per cent.	per cent.	per cent.	per cent.	per cent.
Food and Groceries	41	40	43	39	60
Rent ... ..	20	19	18	14	16
Fuel and Light ...	4	4	6	9	8
Clothing ... ..	18	23	13	19	12
Miscellaneous ...	17	14	20	19	4
Total ... ..	100	100	100	100	100

An analysis of the expenditure of a worker's family, representing the average obtained from pre-war budgets in several countries, was published in previous issues of this Year Book, the percentages being as follows:—Food and groceries 46, rent 25, fuel and light 5, clothing 13, and miscellaneous 11. In comparison with this standard, the Sydney living wage of 1919 shows much higher proportions of expenditure on clothing and miscellaneous items, viz., 18 and 17 per cent. The percentages in respect of the other groups were much lower, particularly rent, which declined from 25 per cent. to 20 per cent. The proportions allotted to the groups, food, rent, and fuel in the Sydney cost of living as standardised by the Commonwealth Basic Wage Commission in 1920 are similar to those of the Sydney living wage, but the proportion is higher for clothing and lower for miscellaneous items.

The analysis of expenditure in the United States relates to wage-earners in average American communities, and was determined from the results of government and other investigations for the purpose of a cost of living survey, conducted by the National Industrial Conference Board. It is comparable with the analysis of the Sydney living wage. The expenditure on food and rent represented 61 per cent. of the total in each case, but the proportions were lower in Sydney for fuel and for miscellaneous items, and higher for clothing. The proportions of expenditure in Canada were determined from studies made regarding family expenditure, a budget being planned on the basis of a family living on the average civil service salary (approximately 1,000 dollars) in 1909. On account of the cold climate a relatively high expenditure on fuel and clothing is necessary in order to maintain a fair standard of comfort.

The proportions of expenditure in the United Kingdom relate to a worker's family; they are based on a pre-war standard, and are used by the Department of Labour in calculating the increase in the cost of living in the United Kingdom. The weight assigned to food was taken from budgets collected in 1904, to rent from data obtained in 1912, and to clothing from pre-war investigation. The analysis bears little resemblance to the other standards. Food expenditure absorbs the high proportion of 60 per cent. of the worker's income, but miscellaneous expenditure represents only 4 per cent.

#### *Change in Regimen.*

Statistics relating to house rents and to the prices and consumption of the principal articles of diet are collected regularly, so that reliable estimates may be made in regard to the cost of food and rent, on which, in the case of a wage-earner, approximately 60 per cent. of the family income is spent. The index numbers on page 534 show the variation in the retail prices of food on the basis of a fixed regimen, but the following statement of the weekly bill of a family of five persons for the principal food commodities in 1914 and in 1921 demonstrates the effect of the variations in prices in relation to the quantities actually consumed.

Fruit and vegetables, except potatoes, have been excluded on account of the impossibility of obtaining prices which would be properly comparable, principally owing to seasonal variations and to the difficulty of estimating the consumption.

Except in the case of flour and sugar, where allowance has been made for the quantities included in bread, jam, etc., the quantities are based upon the consumption per head in 1921, as shown on the first page of this chapter, and the corresponding figures for 1914. In computing the consumption per head no consideration was given to the age and sex distribution of the population,

therefore it is assumed that each member of the family—a man, his wife and three children—consumed, on the average, equal quantities of food.

Article.	Unit of Quantity.	1914.			1921.		
		Weekly Consumption.	Average Price.	Weekly Cost.	Weekly Consumption.	Average Price.	Weekly Cost.
			d.	s. d.		d.	s. d.
Beef ... ..	lb.	12·8	5·3	5 7·8	9·0	9·4	7 0·6
Mutton ... ..	lb.	8·1	4·8	3 2·9	6·3	8·1	4 3·0
Pork ... ..	lb.	·3	10·3	3·1	·2	19·9	4·0
Bacon and Ham ...	lb.	·9	11·0	9·9	·8	25·1	1 8·1
Fish—Fresh, etc. ...	lb.	·8	9·5	7·6	1·0	16·0	1 4·0
„ Preserved ...	lb.	·4	10·5	4·2	·3	24·0	7·2
Potatoes ... ..	lb.	14·4	·9	1 1	10·1	1·2	1 0·1
Flour ... ..	lb.	4·0	1·4	5·6	4·0	2·9	11·6
Bread ... ..	2lb. loaf	10·0	3·5	2 11	9·5	6·2	4 10·9
Rice ... ..	lb.	·8	3·0	2·4	·5	4·9	2·5
Sago and Tapioca ...	lb.	·2	2·7	·5	·2	3·6	0·7
Oatmeal ... ..	lb.	·5	2·6	1·3	·5	4·0	2·0
Sugar ... ..	lb.	6·0	2·7	1 4·2	6·0	5·7	2 10·2
Jam ... ..	lb.	1·6	5·0	8	1·2	10·0	1 0·0
Butter ... ..	lb.	2·9	14·2	3 5·2	2·7	24·7	5 6·7
Cheese ... ..	lb.	·3	10·6	3·2	·3	15·9	4·8
Milk—Fresh ... ..	qt.	7·7	5·3	3 4·8	7·5	8·2	5 1·5
Tea ... ..	lb.	·7	15·8	11·1	·8	22·7	1 6·2
Coffee ... ..	oz.	1·3	1·1	1·4	1·0	1·6	1·6
Total ... ..		...	...	25 11·2	...	...	39 1·7

The weekly expenditure on the commodities enumerated rose from 25s. 11½d. in 1914 to 39s. 1½d. in 1921—an increase of 51 per cent. In spite of the lower rate of consumption the meat bill increased from 9s. 11½d. to 13s. 3½d., while the expenditure on milk and butter rose from 6s. 10d. to 10s. 8½d.

Taking rent into consideration—the average being 20s. in 1914 and 23s. in 1921—the total weekly expenditure was 45s. 11½d. as compared with 62s. 1½d., and the increase per week during the period amounted to 16s. 2½d., which represents 35 per cent.

The price level of food in 1921, computed on the same basis as the index numbers shown in the table on page 537, is found to be 67 per cent. higher than in 1914, and of food and rent combined 43 per cent. higher; the differences from the increases quoted above, viz., 51 and 35 per cent. respectively, are due to the fact that in computing the price levels the

regimen was assumed to be constant. In other words it may be said that the increases in food prices and rent would have increased the average household expenditure on food and rent by 43 per cent. between 1914 and 1921, if that household had purchased the same quantities of the commodities in each year, whereas, owing to decreased quantities being consumed in the later year, the actual increase in expenditure was 35 per cent.

### *Cost of Clothing.*

The measurement of changes in the cost of clothing presents such great difficulty that this group is frequently omitted from official investigations and it is usual to assume that the measurement of the groups, food and shelter, indicates with a reasonable degree of accuracy the variations in the general cost of living. The chief difficulty in regard to the clothing group lies in the determination of standards owing to the vast range of articles of clothing, numerous grades of quality, and rapid changes in fashion and design. The group is, however, of such importance that an effort was made in 1921 to collect particulars to show the movement of the prices of clothing since the beginning of the war period. With this object in view a request was made to a number of large retail firms in Sydney for the necessary information. It was recognised that compliance with the request would entail a fairly considerable amount of labour, but in view of the importance attached to the question of changes in the cost of living it was hoped that a generous response would be made, and it is gratifying to record that nine large retail houses, transacting a considerable volume of business in different classes of the trade, consented to supply the details.

The lists sent to the firms included 42 of the principal articles of clothing for a man, woman, school boy, school girl, and a young child (not an infant in arms); also fourteen items of piece goods, sewing cotton and knitting wool. The firms were asked to quote the price as in January and in July of each year of each item of the quality usually purchased by persons of moderate means, as it was not considered practicable to attempt to collect data concerning articles of the same quality nor even of the same material.

Having obtained data in relation to prices the next step was to combine the quotations so as to form a price-index which would indicate the general trend of the cost of all articles of clothing. The system, used in the case of food prices, of ascertaining an average of the quotations for each article and applying to the averages a weight in accordance with the quantity consumed, was not practicable. Various other methods were investigated, but the results were not satisfactory, and finally it was decided to compile from the quotations of each firm budgets representing annual replacements for a man, a woman, and for each child. The replacements of the various articles were approximately the same as those in the indicator list used by the Australian Basic Wage Commission in 1920. The weight given to each article was not varied; the durability of articles of clothing depends to a large extent upon the quality of the goods, and cheaper grades have relatively a much shorter life than those of better quality, but the people who purchase clothing of the best quality usually discard them while in a better state of preservation than those who must economise. An average was taken of the January and July budgets for each unit of the family to obtain an average for each year; the averages were added to obtain an annual expenditure for a family, and the aggregates were used as the basis of the following index numbers, which were rounded-off and related to 1914=100.

Year.		Index Number.	Year.		Index Number.
1914...	...	100	1918...	...	160
1915...	...	110	1919...	...	190
1916...	...	120	1920...	...	215
1917...	...	140	1921...	...	200

The index numbers show that the cost of clothing rose by about 10 per cent. during 1915 and 1916, and the rate of increase was more rapid in the following years until 1920, when the index number was 115 per cent. higher than in 1914; in 1921 there was a decline which brought the prices back to a level just double the prices in 1914.

The method of taking as a basis of a price index the predominant price paid at various dates by a certain section of the people viz.: those with moderate incomes does not preserve an identity of standard but involves to some extent changes in quality. In normal times the standard of clothing used by any section of the community, *e.g.* unskilled workers, changes very slowly and would not vary appreciably within eight years. The period under review however was characterised by violent changes, social and economic, which were reflected in every phase of national life. In the earlier years of the war prices of food rose much more rapidly than wages, thus necessitating economy, which would naturally be reflected in the matter of clothing more readily than in the food group. Subsequently an expansion of the currency, heavy Government expenditure and an improvement in the return from primary production, created an atmosphere of artificial prosperity, and as wages increased it is reasonable to suppose that a higher standard of clothing became general amongst the majority of the population. In 1920 it became apparent that prices had reached a maximum, and consumers began to restrict their purchases in expectation of a decline. Generally conditions became more or less unsettled and the outlook uncertain; rates of wages did not fall immediately, but unemployment tended to decrease actual earnings. Some important industries entered upon a period of stagnation or retardation, though others had a more favourable experience *e.g.*, the agricultural industry yielded an exceptionally high return in 1920-21.

#### *Cost of Fuel and Miscellaneous Expenses.*

Substantial increases have occurred in the cost of fuel and light. Kerosene, which is included in the list of food and groceries shown above, has more than doubled in price since 1914; gas for household purposes increased from 3s. 6d. per 1,000 cubic feet in July, 1914, to 5s. 9d. in November, 1920. The variations in the price of gas in the metropolitan district were as follows:—1914 (September), 3s. 10d. per 1,000 cubic feet; 1917 (March), 4s. 1½d.; 1918 (September), 4s. 5d.; 1919 (January), 4s. 4d., (August), 4s. 8d.; 1920 (January), 5s. 1d., (November), 5s. 9d. Coal was nearly 75 per cent. dearer in 1921, having risen from 24s. 6d. per ton to 42s. 10d.; and it was 43s. 7d. in 1922. Firewood had increased from 24s. per ton to 37s. 6d. in 1921, or by about 56 per cent.; in the following year the price was 42s.

Almost all the items of miscellaneous expenditure have increased in price; for instance, fares by train, tram, and ferry, which are an important factor. General increases amounting to 66 per cent. have been made in railway fares, viz., 10 per cent. in August, 1917; 7½ per cent. in November, 1918; 15 to 20 per cent. in January, 1920; and 16⅔ per cent. in November, 1920. Tram fares up to 31st March, 1914, were charged at the rate of 1d. per section, but on 1st April following the fare for the second section was increased to 1½d., the fares for two or more sections remaining unchanged. On 8th August, 1917, the fare for a single section was increased from 1d. to 1½d.; on 1st November, 1918, the fare for two sections was increased from 2d. to 2½d.; on 1st January, 1920, the fare for two sections was increased from 2½d. to 3d., and for three sections from 3d. to 3½d.; and on 6th November, 1920, the fares were fixed at the following rates:—One section, 2d., two sections, 3d.; three sections, 4d.; four sections, 5d.; five and six sections, 6d. Further particulars relating to tram fares will be

found in the part of this work dealing with "Railways and Tramways." Increases have been made also in the fares charged on the majority of Sydney Harbour ferry routes. For instance, the monthly season ticket rates, Circular Quay to Milson's Point, were increased as follows:—For men from 4s. 9d. in July, 1914, to 5s. 3d. in January, 1917, to 6s. 6d. in July, 1919, and to 8s. in August, 1921; and for women on the same dates from 3s. 6d. to 4s., 5s. 3d. and 6s. 9d.; the single fares were raised from 1d. to 1½d. in September, 1917, and to 2d. in April, 1921. Corresponding increases were made in respect to other rates, except to Manly where the season ticket rates remained unaltered, until January, 1922, though the single fares were raised from 4d. to 5d. in January, 1920, and to 6d. in January, 1921. The prices of the morning daily papers were increased from 1d. to 1½d. on 1st September, 1919, and from 1½d. to 2d. on 10th May, 1920; and those of the evening papers from 1d. to 1½d. on 2nd February, 1920. The prices of both morning and evening papers were reduced to 1d. at the beginning of July, 1922.

An additional charge of ½d. was imposed on each postal article in October, 1918, and further increases were made in October, 1920, when letter rates were raised by ½d. per ½oz., and fees for telephone calls, except in small country exchanges, were increased by 25 per cent., and increases ranging up to 50 per cent. were made in the charges for telegrams. Contributions to Friendly Societies amounted on an average to about 1s. 3d. per week in 1914; a slight increase occurred in 1915 and in 1919, when the average contribution was 1s. 4½d. per week; in 1921 there was a further rise of 2d. Subscriptions to trade unions, which range from 6d. to 1s. per week, have remained constant.

The retail price of tobacco has increased by over 70 per cent. since 1914. The average price of plug tobacco of popular brand was 10s. 4d. per lb. in 1921, as compared with 6s. in 1914.

Index numbers to represent the variations in the cost of fuel and light used by a family of moderate means are shown below; they have been calculated by weighting the average prices of coal, firewood, and gas, in accordance with the quantity consumed annually. The index numbers of miscellaneous items are approximate only, being based on the items enumerated above. Prices in 1914 were taken as a base and called 100.

Year.	Cost of Fuel.	Cost of Miscellaneous Expenses.	Year.	Cost of Fuel.	Cost of Miscellaneous Expenses.
1914	100	100	1918	120	110
1915	102	102	1919	130	115
1916	105	102	1920	140	140
1917	115	105	1921	155	145

Increases in the cost of fuel and light have been somewhat lower than the increases in food prices, and the variations have not so much effect on the family expenditure as the proportion which these items represent is small, viz., only 4 per cent. Miscellaneous items apparently increased slowly until 1920, when they were about 40 per cent. above 1914 prices, and a further rise occurred in 1921.

#### *Changes in the Cost of Living.*

A fair indication of the changes in the total cost of living may be obtained by summarising the index numbers of the cost of the various items discussed above, assigning to each group a weight in accordance with the ratio its cost bears to the total family expenditure. It is accepted as a general rule that until the income reaches a fairly high figure the proportion spent on clothing rises or falls when the purchasing power of an income increases or decreases, the rule being based on the fact that food and shelter are needs



which must be satisfied before other wants. It is however subject to modification when the movement of prices in the different groups of expenditure is not uniform. The weights applied to the index numbers in the following table are as follows:—Food and groceries 41, rent 20, clothing 20, fuel and light 4, miscellaneous items 15; they represent an approximate mean of the ratios in the official standards of the Sydney living wage fixed by the Board of Trade in 1919 and the Sydney cost of living wage as determined by the Basic Wage Commission in 1920. It is not claimed that the results are an exact measure of the changes, and they are put forth only as a rough indication of the movement in the general cost of living since 1914.

Year.	Food and Groceries.	Rent.	Clothing.	Fuel.	Miscellaneous Items.	General Increase in Cost of Living since 1914.
1914	100	100	100	100	100	...
1915	121	95	110	102	102	about 10 per cent.
1916	132	95	120	105	102	" 15 "
1917	136	95	140	115	105	" 25 "
1918	137	97	160	120	110	" 30 "
1919	155	100	190	130	115	" 45 "
1920	186	110	215	140	140	" 70 "
1921	167	115	200	155	145	" 60 "

In the years 1915 and 1916 food prices increased more rapidly than the cost of any other group, while rents declined; between 1916 and 1918 there was little change in the index number of food prices, but clothing prices advanced rapidly; both these groups reached a maximum in 1920, when clothing prices were more than double the pre-war prices, and food was 86 per cent higher. In the other groups the variation was not so marked—the rise was continuous throughout the period but it was slower. On the whole the cost of living which rose by about 30 per cent. during the war period increased to a greater extent during the two years 1919 and 1920, after the armistice was declared. In 1921 there was a drop of about 5 per cent. as compared with 1920.

## EMPLOYMENT AND PRODUCTION.

### EMPLOYMENT.

COMPLETE information regarding the occupations of the people is obtained only at the Census, and statistics relating to the periods between the Census dates are restricted to employment in certain primary industries and in manufacturing establishments.

The results of the Census of 1921, in respect of the occupations of the people, are not yet available. At the Census taken on 2nd April, 1911, there were in New South Wales 718,820 breadwinners and 916,211 dependents, classified as follows:—

Occupations.	Males.	Females.	Total.	Proportion to Total.		
				Males.	Females.	Total.
<b>Breadwinners—</b>				per cent.	per cent.	per cent.
Professional ... ..	36,763	19,377	56,140	4·34	2·46	3·44
Domestic ... ..	18,898	54,483	73,381	2·23	6·91	4·49
Commercial ... ..	88,208	18,112	106,320	10·42	2·30	6·50
Transport and Communica- tion.	60,367	1,597	61,964	7·13	·20	3·79
Industrial ... ..	171,921	36,093	208,014	20·31	4·58	12·72
<b>Primary Producers—</b>						
Agricultural ... ..	77,599	1,636	79,235	9·17	·21	4·85
Pastoral ... ..	45,194	579	45,773	5·34	·07	2·80
Dairying ... ..	24,530	2,687	27,217	2·90	·34	1·66
Mining ... ..	39,551	23	39,574	4·67	·00	2·42
Others ... ..	12,269	25	12,294	1·45	·00	·75
Independent ... ..	5,507	3,401	8,908	·65	·43	·54
<b>Total Breadwinners ...</b>	<b>580,807</b>	<b>138,013</b>	<b>718,820</b>	<b>68·61</b>	<b>17·50</b>	<b>43·96</b>
Dependents ... ..	265,731	650,480	916,211	31·39	82·50	56·04
Not stated ... ..	11,160	543	11,703	...	...	...
<b>Total ... ..</b>	<b>857,698</b>	<b>789,036</b>	<b>1,646,734</b>	<b>100·00</b>	<b>100·00</b>	<b>100·00</b>

For details regarding occupations and ages\* of breadwinners at the Census of 1911, readers are referred to the 1915 issue of the Year Book.

Information regarding the number of persons employed permanently in the principal industries of the State is collected annually. In the manufacturing industry employees in establishments with fewer than four persons are not included unless machinery is used in the factory. In the rural industries the number of persons employed regularly on rural holdings is recorded, including the occupiers or managers and those members of their families who work constantly on a holding, but temporary hands engaged for harvesting, shearing, etc., are omitted.

Considerable difficulty is experienced in obtaining statistics of the number of rural employees. In 1920 it was decided to exclude from the returns relating to the rural industries, particulars of a number of small holdings used

primarily for residential purposes, with a little cultivated land and a few live stock. As a result a large number of persons, included previously, were excluded from the returns for 1920 and 1921, and the figures for these years are not comparable with those of earlier years. Nor are the figures for the last two years strictly comparable with one another because the change in method of collection did not become fully operative until 1921.

Another difficulty arises from the fact that there is a tendency to return as engaged in rural occupations a number of women and girls who are only partly so employed, in conjunction with, or in addition to, their usual domestic duties. The annual returns collected from the landholders in 1911 showed an excess over the Census figures for that year of more than 20,000 women workers, viz., in agriculture an excess of 4,000, and in dairying 16,000; it is evident, therefore, that they included a large number of women who were classified as dependents in the Census returns.

In 1920 the collectors were instructed to watch this matter particularly, and to exclude women engaged primarily in home duties; as a result, the returns showed a decrease, as compared with 1919, of 10,882 women made up as follows:—In agriculture, 4,192; dairying, 4,482; and pastoral, 2,208. The number engaged in agriculture was lower than at the Census of 1911, but the number in the dairying industry was greater by 10,000, so that apparently it is still overstated.

In the following statement the quotations for 1916 and subsequent years relate to the twelve months ended 30th June, except those for mining, which are for the calendar year, and the figures relating to agriculture include poultry, pig, and bee farmers:—

Year.	Agricultural.		Dairying.		Pastoral.	Mining.		Manufacturing.	
	Males.	Females.	Males.	Females.		Metal.	Coal and Shale.	Males.	Females.
					Males.	Males.			
1901	60,813	4,798	14,865	14,315	28,118	24,200	12,415	54,556	11,674
1906	63,448	5,715	21,476	15,626	32,598	27,347	15,199	59,979	17,843
1911	58,299	5,782	27,488	19,422	43,387	19,360	17,657	82,083	26,541
1913	61,525	6,950	25,961	18,478	40,543	19,914	18,966	93,036	27,364
1916	59,256	8,743	21,979	15,404	38,042	14,412	16,892	87,724	28,677
1917	55,122	9,433	22,363	16,644	38,607	15,479	17,338	88,910	29,087
1918	50,490	8,161	21,071	15,938	43,793*	16,737	16,926	90,025	30,529
1919	45,528	5,353	24,561	17,160	46,899*	14,281	18,178	96,884	30,707
1920	48,942	1,161	24,685	12,678	54,149*	9,198	19,965	109,836	34,618
1921	50,162	1,509	26,648	13,176	44,788*	8,436	21,265	112,187	32,824

\* Includes 2,805 females in 1918, 3,075 in 1919, 867 in 1920, and 1,022 in 1921.

The manufacturing industry has shown the greatest increase in the number of employees, particularly in regard to female employees, who increased threefold between 1901 and 1920, while the number of males was doubled.

In 1921 the number of males showed a further increase, but there was a decline in the employment of women, mainly in the tailoring and dressmaking establishments. The dairying and pastoral industries also have made great progress. The figures relating to the number of persons engaged in agriculture and to the number of women engaged in all rural industries are not comparable over the whole period owing to a change in the basis of collection as explained above.

The persons recorded in 1921 as engaged in the agricultural, dairying, and pastoral industries numbered 136,283, viz., 120,576 males and 15,707 females; of this number 66,785 men and 2,292 women were classed as working proprietors; 16,319 men and 10,952 women as relatives constantly employed but not receiving wages; and 37,472 men and 2,463 women as employees, including managers and relatives working for wages.

In the mining industry the number of coal and shale miners rose from 12,415 in 1901 to 17,657 in 1911, but there was not much progress during the six succeeding years; in 1921 the number was 21,265, the highest on record. Metal mining, and particularly gold mining, has declined steadily; in 1921 the number of gold miners was only 1,516, as compared with 17,958 in 1900; the marked decrease in metal miners since 1919 was the result of industrial dislocation in the Broken Hill district.

The decline in employment generally between 1913 and 1919 was due to the combined effects of the war and drought.

Grouping the figures shown above in Primary and Secondary Industries, the following results are obtained :—

Year.	Primary.			Secondary— Manufacturing.	All Industries.		
	Rural.	Mining.	Total.		Males.	Females.	Total.
1901	122,909	36,615	159,524	66,230	194,967	30,787	225,754
1906	138,863	42,546	181,409	77,822	220,047	39,184	259,231
1911	154,378	37,017	191,395	108,624	243,274	51,745	300,019
1913	153,457	38,880	192,337	120,400	259,945	52,792	312,737
1916	143,424	31,304	174,728	116,401	238,305	52,824	291,129
1917	142,169	32,817	174,986	117,997	237,819	55,164	292,983
1918	139,453	33,663	173,116	120,554	236,237	57,433	293,670
1919	139,501	32,459	171,960	127,591	243,256	56,295	299,551
1920	141,615	29,163	170,778	144,454	265,908	49,324	315,232
1921	136,283	29,701	165,984	145,011	262,464	48,531	310,995

The primary industries form the most important source of the wealth of Australia, and the necessity for continuous expansion has been afforded practical recognition in numerous schemes formulated by the State with the object of encouraging rural settlement.

#### *Government Employees.*

In New South Wales there is a large number of persons employed by the State and Commonwealth Governments. In addition to services such as education, police, justice, health, lands, works, etc., the State owns the railways, tramways, and wharves, and engages in various industrial enterprises, *e.g.*, timber yards and sawmill, trawling, meat supply, dockyards, building-stone and metal quarries, electric-power supply, brick and pipe works; thus a large number of persons are in constant employment. The Commonwealth services include posts, telegraphs and telephones, customs, taxation, and defence.

The number of employees in New South Wales under the Crown as at 30th June, 1921, is shown below :—

Services.	Permanent.		Temporary.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
<b>State—</b>							
Public Service Board ...	9,448	5,506	2,998	1,379	12,446	6,885	19,331
Railways and Tramways ...	31,033	642	17,917	653	48,950	1,295	50,245
Sydney Harbour Trust ...	202	20	1,095	9	1,297	29	1,326
Water Supply and Sewerage —Metropolitan and Hunter District ...	1,546	42	1,093	7	2,639	49	2,688
Water Conservation and Irrigation Commission ...	332	22	1,310	48	1,642	70	1,712
Metropolitan Meat Industry Board ...	...	...	532	16	532	16	548
Police ...	2,741	8	36	3	2,777	11	2,788
Other ...	515	32	6,028	152	6,543	184	6,727
<b>Total ...</b>	<b>45,817</b>	<b>6,272</b>	<b>31,009</b>	<b>2,267</b>	<b>76,826</b>	<b>8,539</b>	<b>85,365</b>
<b>Commonwealth—</b>							
Public Service Commissioner	7,604	1,064	1,818	448	9,422	1,512	10,934
Department of the Navy ...	141	...	439	9	580	9	589
Defence Department ...	920	1	578	185	1,498	186	1,684
Repatriation Department ..	207	53	321	64	528	117	645
<b>Total ...</b>	<b>8,872</b>	<b>1,118</b>	<b>3,156</b>	<b>706</b>	<b>12,028</b>	<b>1,824</b>	<b>13,852</b>
<b>Grand total ...</b>	<b>54,689</b>	<b>7,390</b>	<b>34,165</b>	<b>2,973</b>	<b>58,854</b>	<b>10,363</b>	<b>99,217</b>

#### IMMIGRATION IN RELATION TO EMPLOYMENT.

Power to legislate with regard to immigration and emigration is a function of the Federal Parliament. The legislation is contained in the Immigration Act, 1901-1920, the Pacific Island Labourers Act, 1901-06, the Contract Immigrants Act, 1905, and the Emigration Act, 1910. The enactments relating to immigration define the classes of persons who come under the heading of prohibited immigrants, including persons who fail to pass prescribed dictation tests or do not possess the prescribed certificate of health, criminals, and persons immoral or otherwise undesirable; and they provide for the deportation, within three years of arrival in Australia, of criminals and others.

#### *Contract Immigrants.*

The Contract Immigrants Act, 1905, regulates the admission of immigrants under contract to perform manual labour. Contracts must be in writing, made by or on behalf of some person named and resident in Australia. They are subject to Ministerial approval, which may be withheld if the fulfilment of the contract is likely to be prejudicial to the public welfare, either as affecting an industrial dispute, or as to the conditions of, and standards prevailing in, local industry. Approval may be withheld also, if there is insufficient evidence of difficulty in obtaining a worker of equal skill and ability within the Commonwealth. This latter provision is not applicable to contract immigrants who are British subjects, born in the United Kingdom or descended from a British subject there born; nor does the Act apply to domestic servants and personal attendants accompanying their employers.

During the nine years, 1908-16, the number of contract immigrants admitted to Australia was 916, and of these the contracts of 240 related to New South Wales; of the total number, 803 were described as British and 113 as non-British. Owing to the incidence of the war, there were no contract immigrants during the years 1917-19; in 1920 six British workers were admitted, of whom two had agreed to work in this State. In 1921 twenty-three British workers and two foreigners were admitted, but none of the contracts was for work in New South Wales.

#### *Assisted Immigration.*

State-assisted immigration was inaugurated in New South Wales in the year 1832, and was maintained until 1885, when it was discontinued except in respect of members of the family of persons already assisted to immigrate. From 1832 to 1901, the State expenditure, exclusive of administration, amounted to £3,676,013, and 211,972 persons were assisted, including those who settled in Victoria and Queensland before the separation of those colonies from New South Wales. After an interval of twenty years, the policy was resumed in 1905 by the Government of New South Wales. Provision was made for the dissemination, throughout the United Kingdom, of information regarding the resources of the State, and for the selection of suitable immigrants, for whom assisted passages were arranged. Residents of the State were allowed to nominate relatives for assisted passages.

In 1911 the Commonwealth Government took over the function of advertising the resources of Australia, with a view to promoting voluntary immigration from the United Kingdom, Europe, and America, and the State continued to select and assist immigrants who were considered as desirable settlers. Upon the outbreak of war the Commonwealth Government suspended all activities for the encouragement of immigration, and the assistance granted by the State authorities became restricted to domestic workers, but even this class of immigration had ceased before the end of 1918.

Upon the revival of State-aided immigration, after the war, it was decided in view of local industrial conditions to grant assistance only to persons nominated by residents of the State, and to women for domestic work.

In April, 1919, the Imperial Government arranged to grant free passages to the overseas Dominions for ex-service men and women and their dependents who could produce evidence that they would be acceptable in the Dominions and that provision would be made for them. The Government of New South Wales provided for the acceptance, under this scheme, of immigrants approved by the Agent-General, preference being given to agriculturists, domestic servants, and to persons nominated by residents of New South Wales, who accept responsibility for the nominees upon arrival. The grants by the Imperial Government to dependents are limited to sons and stepsons, who were under 16 years of age on 8th April, 1919, and to daughters and stepdaughters, who were under 18, but the State assists other children and the widowed mothers of approved ex-service immigrants.

On 1st March, 1921, the assisted immigration system was reorganised as the result of a Federal agreement, by which the Commonwealth Government undertakes the control of the overseas organisation for the encouragement of immigration and the selection of immigrants, and makes arrangements for and contributes towards the cost of their passages to Australia. Each State, except Western Australia, which is not a party to the agreement, determines the number and class of immigrants which it desires to receive, and undertakes the responsibility of caring for the immigrants upon arrival, and of settling them on the land or in suitable occupations.

Social and economic considerations render it desirable that the primary object of immigration should be the settlement of the vast sparsely populated rural areas, and this policy is stated specifically in the agreement. Each State has agreed to set out in definite terms the arrangements they will bind themselves to make, and to provide land and other forms of assistance, such as depots, sustenance and general care of immigrants, employment on public works, particularly upon the unification of railway gauges, and conservation and other works in connection with the river Murray. The Commonwealth has agreed to assist, by loans, approved schemes for land settlement and public works. The desirableness of promoting a steady influx of immigrants for the purpose of land settlement has recently attracted the attention of the citizens of New South Wales. A movement called the Million Farms Scheme has been inaugurated, and a number of public men have undertaken to obtain support for the furtherance of the scheme.

The following statement shows the expenditure on immigration by State grants since 1832, and the number of assisted immigrants who arrived in New South Wales. After 1905 the number of immigrants nominated by residents of the State and the number selected abroad by the Immigration Office are shown separately.

Year ended 30th June.	Expenditure, exclusive of Administration.	Immigrants Assisted.				
		Nominated.	Selected.	Total.		
				Males.	Females.	Total.
	£					
1832-1901	3,676,013	...	...	104,106	107,866	211,972
1905-1909	44,925	6,144	2,713	*	*	8,857
1910-1914	221,601	32,406	12,444	23,816	21,034	44,850
1915	24,501	2,399	1,109	1,498	2,010	3,508
1916	13,571	888	152	354	686	1,040
1917	3,690	526	60	168	418	586
1918	1,367	191	1	26	166	192
1919	1,060	119	...	21	98	119
1920	3,025	873	214	527	560	1,087
1921	6,847	4,026	560	2,220	2,366	4,586

\* Information not available.

The figures for 1920 and 1921 include immigrants to whom the Imperial Government granted free passages, viz., 663 during the year ended June, 1920, and 3,394 in the following year; 2,137 were males and 1,920 were females. All were British subjects from the United Kingdom; 3,413 were nominated by residents of New South Wales, and 644, including 416 domestic servants, were selected immigrants.

Prior to the war, arrangements existed with various steamship companies for passages from the United Kingdom at the rate of £14 per adult, of which the State Government paid from £4 to £8; but when accommodation became available after the war the shipping companies increased the cost to £32 8s. per berth, and the Government raised its contribution by £4.

Under the Federal scheme a contribution of £12 is made towards the passage of every approved adult immigrant, and of £6 in respect of each child between 3 and 12 years of age.

In the case of persons nominated for assisted passages by relatives in the State, nominators are required to lodge the reduced steamer fare, and to guarantee that employment awaits nominees, or that adequate provision will be made for their maintenance.

The following statement shows the distribution of selected immigrants in their respective occupational classes in each of the last ten years :—

Year ended 30th June.	Rural Workers.	Domestic Servants.	Other.	Families of fore- going.	Year ended 30th June.	Rural Workers.	Domestic Servants.	Other.	Families of fore- going.
1912	2,483	520	205	767	1917	3	51	...	6
1913	1,672	549	3	275	1918	...	1	...	...
1914	542	567	...	321	1919	...	...	...	...
1915	497	477	...	135	1920	86	102	1	25
1916	8	126	...	18	1921	94	398	6	62

In placing immigrants in suitable employment, the authorities act in co-operation with the State Labour Exchanges.

Any immigrant who settles upon the land as owner, lessee, or labourer, within a reasonable time of his arrival, may be granted concessions in regard to railway fares and freight when travelling to the district in which he settles. These concessions may be granted also to nominated immigrants proceeding to the homes of their nominators, or travelling to take up farm work or domestic service.

The following statement shows the proportion of British subjects, in comparison with foreign-born, among assisted immigrants, in the period 1912-1921 :—

Year ended 30th June	Immigrants from—						Total.		
	United Kingdom.		Other British Possessions.		Foreign Countries.				
	Nomin- ated.	Selected.	Nomin- ated.	Selected.	Nomin- ated.	Selected.	Nomin- ated.	Selected.	Total.
1912	8,781	3,958	1	...	99	17	8,881	3,975	12,856
1913	10,997	2,482	3	...	150	17	11,150	2,499	13,649
1914	5,197	1,396	23	8	164	26	5,384	1,430	6,814
1915	2,347	1,087	9	5	43	17	2,399	1,109	3,508
1916	869	145	7	...	12	7	888	152	1,040
1917	515	60	2	...	9	...	526	60	586
1918	189	1	...	...	2	...	191	1	192
1919	118	...	1	...	...	...	119	...	119
1920	868	214	3	...	2	...	873	214	1,087
1921	4,010	560	16	...	...	...	4,026	560	4,586

There are two private organisations which assist the immigration of boys and youths, viz., the Dreadnought Fund Trust and the Dr. Barnardo Homes.

The Dreadnought Fund was established in 1909 by public subscription to defray the cost of building for the Imperial Navy a war vessel of the Dreadnought type. On the institution of the Australian Navy it was decided to use part of the funds to assist the immigration of lads from 17 to 20 years of age, for the purpose of following rural pursuits. The trustees pay part of the passage money, and advance a sum sufficient to defray the balance of the



cost of bringing the lads to New South Wales; they pay also the fees for a course of training at one of the State farms. Upon completion of the course the lads are placed in employment through the agency of the State Labour Exchanges, and they repay in instalments the advances made from the Fund. Operations under this scheme were suspended during the war period, but were resumed recently. In 1921 sixty-three boys were brought to New South Wales.

The organisation known as Dr. Barnardo Homes works in conjunction with an English institution of that name, which arranges passages and pays the passage money to Australia of boys trained in their homes and on farms in England. The local organisation places the boys with farmers, where the home conditions are found to be satisfactory. A hostel is maintained at Five Dock, Sydney, to accommodate them until they go to the country. After a probationary period of three months on the farms, the boys are apprenticed until they reach the age of 21 years, and the organisation keeps constantly in touch with them during their apprenticeship. From October, 1921, when the first of these boys were landed in Sydney, to May, 1922, ninety Barnardo boys had arrived in New South Wales.

#### TRADE UNIONS.

Legislation to define the legal status of trade unions was not passed in New South Wales until 1881; up to that time the unions were subject to Imperial Acts, which recognised the right to combine but penalised acts done in restraint of trade, and did not afford protection to the unions' funds. The Trade Union Act of 1881 is still in operation, though it has been amended by the Industrial Arbitration (Amendment) Act of 1918. A trade union is defined as "any combination, whether temporary or permanent, for regulating the relations between workmen and employers, or between workmen and workmen, or between employers and employers, or for imposing restrictive conditions on the conduct of any trade or business, whether such combination would or would not, if this Act had not been passed, have been deemed to have been an unlawful combination by reason of some one or more of its purposes being in restraint of trade."

Members of a trade union are free from liability to criminal prosecution for conspiracy or otherwise merely because the purposes of the union are in restraint of trade; and the Act declares that unions are not unlawful for civil purposes. Provision is made for the registration of trade unions, for the appointment of trustees in whom the union property is vested, for the constitution of rules, and for the amalgamation or dissolution of registered unions.

By the Industrial Arbitration (Amendment) Act of 1918 it is provided that a trade union may use its funds for any lawful purpose authorised by its rules. A union may apply its money and property to the furtherance of political objects so long as rules are in force providing that such payments are made from a separate fund, to which contribution by members is optional. A fund for political objects is not liable for attachment in satisfaction of a penalty imposed upon a union.

The Industrial Arbitration Court may adjudicate upon legal proceedings instituted to enforce any of the following agreements, viz., the constitution or rules of the trade union; agreements between members concerning the conditions on which they shall sell goods, employ or be employed; agreements made by a union with an employer for the regulation of any business

or industry; and agreements between trades unions. The Amending Act stipulates that persons qualified by occupation or employment, unless of general bad character, may not be excluded from membership of a trade union.

There are two classes of trade unions, viz., unions of employers and unions of employees. The great majority of the registered organisations belong to the latter class, and it is interesting to trace the development of unionism amongst the workers in New South Wales.

Conditions in the early days of settlement did not favour the growth of trade unionism, and apparently there was little permanent organisation until the latter part of the nineteenth century, though temporary combinations of workmen were formed as benefit societies or for the protection of mutual trade interests during the twenty years which preceded the discovery of gold.

The influx of population during the fifties brought to New South Wales many artisans who had been members of oversea unions; they obtained employment in the simple industries then established and formed unions on the craft basis, which was characteristic of the English unions at that time.

The majority of the unions were connected with the building industry, in which there was a great demand for skilled artisans to provide houses for the rapidly increasing population. The standard of living for workmen was higher in New South Wales than in the older countries, whence the immigrants came; wages at this period were high, and steady employment obtainable readily; therefore the unions directed their activities mainly towards the reduction of working hours to eight per day. The operative masons gained the reduction after a strike in 1855, but the eight-hour movement made very little progress during the period of depression which followed the excitement of the gold discoveries. In 1871 four unions in the building trade, who had gained the objective, inaugurated the Eight-hour celebration, since held annually. Subsequently the 48-hour week became the standard in the majority of trades.

As the gold fever subsided and the gold-seekers began to drift from the mining areas to the metropolis and other centres of population, the unions endeavoured to resist reductions in wages, but their efforts were generally unsuccessful, owing to widespread unemployment. Industrial conditions improved during the prosperous years, 1872 to 1885, and trade unionism expanded steadily. Workers in the mining and rural industries began to organise, and the unions turned their attention to matters of wages and working conditions; and the employment of large numbers of aliens, especially in the furniture and mining industries, excited their determined opposition.

A central delegate body, the Sydney Trades and Labour Council, was formed in 1871, and a movement towards closer organisation became apparent in the federation or amalgamation of groups of unions in the same industry and of unions connected with the same craft in different localities; also in the holding of intercolonial trade union congresses.

After suffering severely in the industrial dislocations of the early nineties, the unionists decided that it was necessary for the furtherance of their aims to secure direct Parliamentary representation. Their success in this endeavour was facilitated by the provision made in 1889 for the payment of members of the Legislative Assembly. In 1891 a number of pledged supporters was returned to the Assembly, and since that period political action has been a prominent feature in trade-union circles. The political labour

leagues, that formulate the policy and select the candidates for Parliamentary elections, are distinct from the industrial organisations, and may include in their membership persons who are not members of a trade union.

During the first decade after the Trade Union Act came into operation 141 unions were registered, the greatest number in one year being 38 in 1890; in the following year 21 were registered. Then the effects of industrial unrest and the financial crisis became apparent; many of the existing unions collapsed, and during the nine years, 1892 to 1900, only 31 new unions were registered. The total number registered up to the end of 1900 was 172, including 5 unions of employers, though in that year only 47 furnished returns to the Registrar, non-compliance with the law in this respect indicating, in most cases, that the organisation was defunct.

The introduction of the State system of industrial arbitration in 1901 brought about a marked revival in trade unionism. The advantages to be gained by employees from the arbitration system were restricted to a large extent to members of industrial unions registered under the Arbitration Act, and such registration, in the case of employees' unions, was granted only to trade unions registered under the Trade Union Act of 1881 and to branches of trade unions registered or having their principal offices outside the State. For this reason the introduction of arbitration led to a rapid increase in the organisation of new unions, and 106 were registered under the Trade Union Act during the next three years, 1901-03.

Upon registration under the Industrial Arbitration Act an industrial union becomes a corporate body with perpetual succession and power to acquire and deal with real and personal property, and obtains advantages not accorded by the Act of 1881, such as the right to institute proceedings before industrial magistrates for the recovery of subscriptions from members. A clause in the Act empowering the Industrial Court to grant a measure of preference to unionists was an incentive to workpeople to join the unions. During the first year the Industrial Arbitration Act was in operation 101 industrial unions of employees, representing nearly 60,000 members, were registered; and in 1907 the membership of industrial unions on the register had risen to 96,000.

Under the existing law of the State contained in the Industrial Arbitration Act of 1912 and its amendments a trade union is still recognised as the only basis for the registration of an industrial union of employees. It should be clearly understood that an industrial union is the same organisation as the trade union, the latter term indicating merely that the union has undergone dual registration for the purposes of the administration of the Industrial Arbitration Act. Since 1912 the scope of the State industrial system has been widened, with the result that unionism, restricted formerly to manual workers, has developed amongst other groups of employees, who have organised for the purposes of arbitration and collective bargaining, *e.g.*, school teachers, professional and clerical employees in the public services, bank officials, journalists, theatrical employees, and musicians.

In 1904 legislation was passed by the Commonwealth Parliament to constitute a Federal tribunal for the prevention and settlement of industrial disputes. One of the declared objects of the Act is to encourage industrial organisation, and a result has been the strengthening of the bonds of common interests between groups of workers in the various States. Some of the unions previously on the State registry have become merged into federated associations, but unless a union elects to be regulated exclusively

by the Federal authority, the branch in New South Wales retains its registration under the State Act.

A number of the unions are affiliated with Labour Councils, which have been formed in the main industrial centres—Sydney, Newcastle, and Broken Hill. Efforts have been made to effect closer organisation, but they have not yet been attended with general success.

Statistics are not available to show fully the extent to which trade unionism has developed in New South Wales. Under the Trade Union Act, the unions should furnish annual returns to the Registrar, but in each year a number fail to comply with the law. Therefore the figures relating to unions of employees shown in the following table are not complete.

Year.	Unions of Employees	Members.			Receipts.	Expenditure.	Funds at end of Year.
		Males.	Females.	Total.			
1911	179	145,784	4,743	150,527	£ 157,202	£ 146,757	£ 112,494
1916	202	218,609	12,941	231,550	241,644	249,691	202,950
1917	218	216,553	15,726	232,279	252,613	289,426	149,783
1918	209	197,406	15,659	213,065	240,621	235,587	154,774
1919	199	208,684	17,052	225,736	276,382	269,056	156,018
1920	197	226,030	23,210	249,240	355,702	331,438	176,575

The number of unions and the membership increased considerably between 1911 and 1917; the decline in the following year may be attributed to enlistments for war service and to the industrial upheaval in the latter part of the year 1917. In the last two years of the period reviewed the membership increased again, and in 1920 the number was 66 per cent. above the figure in 1911 and 17 per cent. greater than in 1918.

A striking feature of the comparison is the increase in the number of women unionists, which rose from 4,743 in 1911 to 23,210 in 1920—a result of the extension of the industrial arbitration system. The women members in 1920 included 6,832 clothing trade employees, 5,425 engaged in the manufacture and distribution of food, drink, and narcotics, 2,935 public school teachers, and 1,684 shop and warehouse employees.

The receipts and expenditure of the trade unions are liable to fluctuations, being influenced greatly by the industrial conditions in each year, and the amounts are inflated by the inclusion of donations from one trade union to another. For instance, in 1920 the Engine-drivers and Firemen's Union at Broken Hill, where a prolonged strike was in progress, received a large amount of money from other organisations for purposes of relief. The receipts of the union during 1920 amounted to £84,086 and the expenditure to £78,978, as compared with £5,516 and £6,055, the respective amounts in the previous year.

The funds include cash and freehold property and such assets as shares in Trades Halls and newspapers; in the case of unions which are branches of federated unions the balance of funds at the close of the year is usually transferred to the credit of the central executive.

The following statement shows the receipts, expenditure, accumulated funds, and membership of trade unions of employees, according to industrial classification, in the year 1920 :—

Industrial Classification.	Receipts.	Expenditure.	Funds at end of year.	Membership at end of year.			Funds per member.
				Males.	Females.	Total.	
Unions of Employees—	£	£	£	No.	No.	No.	s. d.
Building ... ..	23,300	19,081	25,076	22,231	50	22,281	22 6
Clothing ... ..	7,266	7,160	9,374	4,368	6,832	11,200	16 9
Engineering and Metal Working ... ..	44,862	40,623	28,179	25,222	...	25,222	22 4
Food, Drink, and Narcotics	19,468	18,588	9,453	16,830	5,425	22,255	8 6
Land Transport, exclusive of Railways and Tramways	6,502	5,622	4,061	7,443	...	7,443	10 11
Mining and Smelting ...	113,603	105,491	15,190	16,693	...	16,693	18 2
Pastoral ... ..	41,228	44,277	18,762	31,409	351	31,760	11 10
Printing, Bookbinding, etc.	7,801	7,282	12,388	3,479	982	4,461	55 7
Railways and Tramways ...	12,925	11,930	5,727	27,903	120	28,023	4 1
Shipping and Sea Transport	13,708	13,792	4,120	11,539	16	11,555	7 2
Manufacturing, n.e.i. ...	17,073	16,172	14,254	14,705	1,203	15,908	17 11
Public Service (including School Teachers) ...	9,485	6,193	5,803	7,683	3,209	10,882	10 8
Miscellaneous—							
Labour Councils and Federations of Employees ...	1,451	1,477	266	...	...	...	...
Eight-hour Committees ...	2,261	2,059	9,775	...	...	...	...
Other Miscellaneous ...	34,769	31,691	14,147	36,525	5,022	41,557	6 10
<b>Total Unions of Employees...</b>	<b>355,702</b>	<b>331,438</b>	<b>176,575</b>	<b>226,030</b>	<b>23,210</b>	<b>249,240</b>	<b>14 2</b>

The strongest unions financially are those connected with the printing and bookbinding trades. Next in order of importance, measured by accumulated funds per member, are the building and the engineering and metal-working-groups.

Numerically the strongest group is the pastoral, which includes the Australian Workers' Union, with nearly 30,000 members. The number of unions having a membership of 1,000 and over is only 62, or 33 per cent. of the total.

The numerical strength of employees' unions, excluding the Labour Councils, Federations, and Eight-hour Committees, is shown in the following statement :—

Membership.	Em- ployees' Unions.	Membership.	Em- ployees' Unions.
Less than 100 ...	35	5,000 to 6,000 ...	4
100 to 500 ...	60	6,000 „ 7,000 ...	1
500 „ 1,000 ...	30	8,000 „ 9,000 ...	1
1,000 „ 1,500 ...	17	10,000 „ 11,000 ...	1
1,500 „ 2,000 ...	9	11,000 „ 12,000 ...	1
2,000 „ 3,000 ...	12	Over 25,000 ...	1
3,000 „ 4,000 ...	10		
4,000 „ 5,000 ...	5		
		<b>Total ...</b>	<b>187</b>

#### *Unions of Employers.*

The records of the Registry of Trade Unions show that few unions of employers seek registration under the Trade Union Act of 1881, so that

the available information concerning them is scanty and does not afford any indication of the extent of organisation amongst employers.

Such unions are usually small compact bodies with adequate funds at their disposal to obtain the services of trained experts to undertake the work of their organisations in the conduct of collective bargaining, and the advocacy of their claims before the industrial tribunals, and for trade and political purposes. They do not require, as in the case of the larger and more unwieldy unions of employees, to have the scope of their operations rigidly defined by a set of registered rules.

The unions of employers registered under the Trade Union Act in 1920 numbered 18. The membership during the year was 3,630, the receipts £11,915, and the expenditure £10,386. The funds at the end of the year amounted to £5,209. The unions with the largest membership were—Licensed Victuallers, 3,861; Farriers, 1,769; Building Trades, 1,739; and Bakers, 1,688.

Any employer or group of employers with at least 50 employees may register as an industrial union under the Industrial Arbitration Act; and in April, 1921, there were on the register 126 employers' unions, including the Employers' Federation, and unions of steamship owners, colliery proprietors, pastoralists, merchants, and nearly all classes of manufacturers. Statistics are not available regarding their membership or operations.

#### UNEMPLOYMENT.

Statistics of unemployment are not collected except at census dates. At the census in April, 1911, the unemployed in New South Wales, *i.e.*, persons out of work for more than a week, numbered 16,210 males and 2,700 females; of these, 15,429 males and 2,668 females were under 65 years of age, and represented 4 per cent. of the males and 2·6 per cent. of the females in receipt of wages or salary. The number ascertained at the census of 1921 is not yet available.

Returns relating to the condition of employment amongst various classes of workers are supplied to the Department of Labour and Industry by secretaries of trade unions, but the data received cannot be regarded as sufficient to indicate the extent of unemployment. Many unions do not furnish returns regularly, and a large number, including unions of workers following unskilled occupations in which unemployment is most likely to occur, do not supply any information owing to lack of records.

Though the Australian States have suffered far less than other countries in the industrial and economic disorganisation of the post-war period, evidence of unemployment in many industries in 1921-22 led to conferences between representatives of employers and trade unionists to discuss proposals for relief. A round-table conference between the parties was held in Sydney in February, 1922, under the presidency of the Prime Minister, but the representatives were unable to agree, and the conference ended without any practical result.

#### *Intermittency of Employment.*

Apart from unemployment arising from an over supply of labour, which is apparently a permanent condition in regard to unskilled occupations, there are many industries in which a considerable loss of working time occurs even in normal periods on account of intermittency arising from fluctuations

in trade and in the volume of production, or from the seasonal nature of the work and other causes. In the manufacturing industry, in which about 145,000 persons are employed, returns show that the average time worked in all classes of factories is approximately  $11\frac{1}{2}$  months per annum; the average has remained fairly constant over a period of years, but as the figure relates more particularly to the time during which any manufacturing operations were conducted in the establishment, it affords little indication regarding the intermittency suffered by the employees.

In the building trades intermittency is a recognised feature, though a large proportion of these employees are skilled and the reserves of workers cannot, under normally favourable conditions, be great. On the other hand a system of organisation has not been devised to ensure continuity of employment and at the same time a sufficient supply of labour to obviate delay in the fulfilment of contracts.

Coal-mining is an industry in which intermittency is a constant factor, and for a number of years the Department of Labour and Industry has endeavoured to collect information relating to interruptions to work in the principal mines. From these records the following particulars have been obtained to show the number of work-days on which the collieries have been idle during each year since 1915; mines closed throughout a whole year are not included :—

Particulars.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	Annual Average 1915 to 1921.
No. of collieries supplying information ...	78	77	83	68	68	80	90	78
Possible working days ...	276	278	276	272	278	274	270	275
Days worked ...	197	188	210	213	214	229	227	213
Working days lost—								
Through disputes ...	20	40	47	6	12	15	15	23
Other causes ...	59	50	19	53	52	30	28	39
Total ...	79	90	66	59	64	45	43	62
Working days lost, per cent. of possible—								
Through disputes ...	7.2	14.4	17.0	2.2	4.4	5.5	5.5	8.3
Other causes ...	21.4	18.0	6.9	19.5	19.2	10.9	10.4	14.2
Total ...	28.6	32.4	23.9	21.7	23.6	16.4	15.9	22.5

During the period of seven years the average number of work days was 275 per annum, after making allowances for Sundays, pay Saturdays, and regular public holidays. The days on which operations were suspended numbered 62 per annum, or 22.5 per cent. of the total work-days; 23 days, or 8.3 per cent., were lost through industrial disputes, and 39, or 14.2 per cent. through other causes. Slackness of trade, owing to restrictions imposed on the export of coal, was the cause of considerable loss during the war period.

The total loss of working time involved by the interruptions to work in the coal mines is shown below; the figures have been obtained by multiplying the number of days on which the collieries were idle by the number of

employees affected, and the working days lost have been classified according to the causes of the dislocations :—

Causes.	Days Lost.					1917-1921.	
	1917.	1918.	1919.	1920.	1921.	Average per Annum.	Per cent. of Total.
Industrial disputes..	788,563	92,692	238,644	307,349	355,922	356,634	32·3
Truck shortage ...	24,504	49,229	63,573	102,962	47,775	57,609	5·4
Slackness of trade and shortage of shipping ...	468,899	660,681	827,155	345,407	354,713	531,371	48·0
Mine disabilities, etc.	11,572	12,975	32,772	36,851	110,296	40,893	3·7
Deaths of employees	9,191	3,213	5,916	8,659	22,171	9,830	·9
Meetings, extra holidays ...	16,079	40,462	8,406	12,834	25,006	20,557	1·8
Other causes ...	6,431	456	1,950	8,104	3,052	3,999	·4
Not stated ...	46,663	184,946	94,756	38,237	60,052	84,931	7·5
Total ...	1,371,902	1,044,654	1,273,172	860,403	978,987	1,105,824	100

The number of days lost on account of dislocations in this industry during the period of five years reaches the formidable total of 1,105,824 days per annum. Lack of trade or of shipping was responsible for 48 per cent. of the loss, and industrial disputes for 32·3 per cent. Apparently trade declined steadily during the first three years of the period, until in 1919 the loss from slackness of trade and shortage of shipping was greater than that occasioned by industrial disputes in 1917, when industrial unrest was prevalent throughout the industries of the State. In 1920 the condition of trade and shipping showed a marked improvement, which was maintained throughout 1921, and the loss on this account declined by over 50 per cent.

The industrial upheaval of 1917 was followed by a period which was comparatively peaceful, and the loss through industrial disputes dropped from 788,563 days in that year to 92,692 days in 1918. During the last three years, however, the loss through disputes has shown an upward tendency; further details relating to this cause will be shown on a later page.

The number of employees in the coal-mining industry, as shown in an earlier table, is about 20,000, but as coal-mining is a fundamental industry, variations in the volume of production have a far-reaching effect on other industries and commercial enterprises.

#### *Relief of Unemployment.*

Measures for the relief of unemployment are undertaken by the State Department of Labour and Industry, and are directed mainly towards the organisation of the supply of labour, by means of labour exchanges, and the assistance of destitute persons in need of sustenance while seeking employment.

A few of the trade unions provide for the payment of out-of-work benefits to their members, but otherwise there is little insurance against unemployment. The State has not instituted any fund for the purpose, and there have been no operations under a section of the Industrial Arbitration Act which authorises the Government to subsidise from public revenue unemployment insurance funds created by contributions of employers and employees.



*State Labour Exchanges.*

Efforts to relieve unemployment were first made by the Government in 1855, when a Casual Labour Board was established. In 1892, during a period of widespread industrial distress, it was replaced by the Government Labour Bureau, where persons in need of employment were registered, and casual labour was provided for those in need of immediate relief. In 1900, a Commission was appointed to inquire into the question of unemployment, and subsequently the Commissioners were placed in control of the Government Labour Bureau, a casual labour farm, which had been established at Pitt Town, and a labour depot near the city. In 1905, the office administered by the Labour Commissioners was reorganised as a State Labour Branch, with a salaried staff under the control of the Public Service Board. Since 1912, it has been attached to the Department of Labour and Industry, and the scope of its operations has been extended widely.

In 1918, arrangements were made to co-ordinate the activities of the labour exchanges and of the office dealing with assisted immigration, so that the State immigration policy might be readily adjusted in accordance with local industrial conditions, while the labour exchanges might be used to facilitate the placing of immigrants in suitable employment.

The State labour exchanges are situated in the main industrial centres, Sydney, Newcastle, and Broken Hill. The central exchange, with separate departments for men and for women, is in Sydney, and there is a branch in the vicinity of the principal wharves, and another at Balmain. Sub-agencies have been opened in eight suburban centres, and in 138 country towns. The expenses of the exchanges are borne by the State, fees are not charged, and advances by way of loan may be made to enable persons to avail themselves of employment offered.

The functions of the State labour exchanges are to bring together intending employers and persons seeking employment, to encourage industrial training in skilled trades, to provide suitable training for vagrant and other persons unsuited for ordinary employment, and to co-operate for these purposes with private employment agencies.

In cases where the Department knows of the existence of an industrial dispute, applicants for positions offered by employers concerned in the dispute are notified that the dispute has occurred, and they are not prejudiced at the exchanges by reason of accepting or rejecting the work offered. Fares are not advanced to enable workmen to take vacancies due to a dispute, nor to assist strikers to obtain work outside the districts in which they ordinarily reside.

The State exchanges are concerned specially in securing employment for men who were engaged in active war service. The Returned Soldiers and Sailors Employment Act provides for preference to returned men; employers desiring to obtain employees are required to apply to a State labour exchange or to a committee dealing with the repatriation of soldiers and sailors.

The operations of the State labour exchanges during the last seven years are shown below :—

Year ended 30th June.	Applications for Employment.	Applications from Employers.	Persons sent to Work.
1915	24,838	11,842	10,228
1916	18,996	19,017	13,668
1917	19,572	16,771	11,428
1918	23,140	16,261	11,679
1919	22,151	28,937	19,821
1920	42,634	34,016	27,198
1921	45,888	42,081	36,177

*State Labour Depot.*

For the relief of unemployed persons seeking temporary shelter and assistance the State Labour Depot is maintained at Randwick in proximity to the city; a pig, vegetable, and flower farm, and a dairy have been established, and destitute men unable to maintain themselves are given lodging, food, and a small money allowance in exchange for labour. Competent tradesmen, if employed at their trade, are paid extra. The period of residence must not exceed three months, nor recommence without a similar interval. A certain amount of training is given, and whenever possible trainees are sent to employment.

*Private Employment Agencies.*

Private employment agencies are subject to supervision by the State authorities in terms of the Industrial Arbitration (Amendment) Act, 1918. Such agencies may be conducted by licensed persons only, and they are required to keep registers of persons applying for labour or employment, and of engagements made. The scale of fees chargeable is fixed by regulation, and if an applicant does not obtain labour or employment within fourteen days, the fee must be repaid, less out-of-pocket expenses. Licensees are prohibited from sharing fees with employers, and from keeping as lodgers persons seeking employment.

At 30th April, 1922, there were 61 private agencies on the register, viz., 33 in Sydney, 11 in the suburbs, and 20 in country districts.

## INDUSTRIAL DISLOCATIONS CONTINGENT UPON DISPUTES.

*Prohibition of Strike or Lock-out.*

The Industrial Arbitration Act, 1912, repealing previous Acts aimed at the repression, and not at the absolute prohibition, of strikes and lock-outs, and substituted a pecuniary penalty for imprisonment.

The Industrial Arbitration Amendment Act, 1918, repealed the provisions of the 1912 Act regarding strikes, and established the principle that, with certain exceptions, strikes may be recognised as lawful, the following, and no others, being illegal :—

- (a) Any strike by employees of the Government or its Departments, or of any city, shire, or municipal council, or by employees engaged in military or naval contracts.
- (b) Any strike by employees in an industry of which the conditions are regulated by award or industrial agreement: Provided that when an award has been in operation for at least twelve months a union of employees may decide to withdraw from its conditions by a majority vote taken at a secret ballot, in which not less than two-thirds of the members take part.
- (c) Any strike which has been commenced prior to the expiry of fourteen days' notice to the Minister.

When a strike is contemplated or at any time during the currency of a strike the Minister may direct that a secret ballot be taken of the members of any industrial or trade union, or of any association of employees, in order to ascertain whether the majority is or is not in favour of the strike.

Any trade union whose members are taking part or aiding or abetting an illegal strike may be fined £500, and a penalty not exceeding £50, or six

months' imprisonment, may be imposed on any person aiding or instigating an illegal strike or obstructing a ballot. Penalties are imposed also for picketing in connection with an illegal strike or for inducing persons to refrain from handling any commodity during the currency of a strike.

The Commonwealth Conciliation and Arbitration Act prohibits strikes and lock-outs in relation to industrial disputes. The prohibition does not apply to anything proved to have been done for good cause independent of the dispute, but in case of prosecution the onus of such proof lies on the defendant; a prosecution under this section may not be instituted without the leave of the President of the Court. Lock-outs and strikes by persons or organisations affected by awards of the Commonwealth Court are prohibited absolutely. The penalty for lock-out or strike is £1,000.

#### *Particulars of Dislocations.*

Records relating to industrial dislocations contingent upon disputes in all classes of industry are kept by the Department of Labour and Industry. The principal sources from which data are obtained are reports by police officers, departmental inspectors, and managers of coal-mines, while information is obtained also from managers of other industrial establishments, and from union secretaries, and from newspapers and trade journals.

Apparently the provision of machinery under State and Federal legislation for the adjustment of industrial relations between employers and workers has not led to an actual decrease in industrial unrest during the past eight years, but generalisation is not possible in view of the abnormal conditions which prevailed throughout the period. Apart from the social and economic disorganisation due to the war, the persistent rise in prices tending to lower the standard of living among wage-earners has been a potent cause in promoting discontent.

In the compilation of the following tables relating to industrial dislocations contingent upon disputes, it should be explained that in counting the number of dislocations it is the rule of the Department of Labour to consider that the cessation of work contingent upon any one dispute constitutes only one dislocation; for example, if a section of employees in an industry cease work and the dispute extends subsequently to other employees in that industry in the same or in other localities, one dislocation is recorded. On the other hand, if employees in other industries cease work in sympathy with the militant unions, the sympathy strikes are counted as another dislocation, that is, one in addition to the original dislocation.

In the coal-mining industry, when the action of one section of the employees has caused a complete cessation of the operations of the mine, the number counted is the full complement of the mine; but where a section has ceased work and the operations of the mine have continued, only those who ceased work have been included as workers involved.

In calculating the working days lost, only actual working days, viz., days on which work would ordinarily be performed, have been counted, but apparently no allowance has been made for intermittency of employment, and it has been assumed that if the dispute had not occurred work would have been continuous during the period of its currency.

The following statement shows, so far as can be ascertained, the number of workers involved, and the time lost by industrial dislocations contingent upon disputes in each year since 1914. Particulars are shown separately

regarding dislocations which originated during the year specified, and those which commenced at an earlier date :—

Year.	Dislocations.			Workers Involved.			Working Days Lost during Year.		
	Anterior.	New.	Total.	Anterior.	New.	Total.	Anterior.	New.	Total.
1914	6	313	319	631	75,256	75,887	9,418	747,737	757,155
1915	7	314	321	3,716	94,346	98,062	164,035	470,207	634,242
1916	5	344	349	5,144	157,102	162,246	261,987	895,338	1,157,225
1917	5	289	294	1,294	144,704	145,998	18,813	2,857,515	2,876,328
1918	1	152	153	340	38,652	38,992	4,080	186,344	190,424
1919	7	306	313	1,949	123,174	125,123	19,484	2,113,114	2,132,598
1920	9	411	420	10,023	151,018	161,041	1,558,634	741,744	2,300,378
1921	4	555	559	20,597	169,510	190,107	227,645	438,273	665,918

The loss of working time was greatest in the year 1917, due to a dispute which originated in the Government railway workshops, where the employees ceased work as a protest against the introduction of a time-card system. The dislocation extended to other transport and the coal-mining industries, and to some manufacturing trades until the number of workers involved rose to 73,536, and a loss of 2,563,100 days was incurred. In 1919 and 1920 the principal dislocation was caused by a dispute which commenced at Broken Hill, in May, 1919, with the mine engine-drivers, firemen, etc., and afterwards extended to the miners; the dispute remained unsettled until November, 1920; 6,375 workers were involved and 2,706,493 working days were lost, viz., 1,241,552 in 1919 and 1,464,941 in 1920.

A classification of the dislocations according to mining and non-mining industries reveals the fact that disputes leading to a suspension of work occur more frequently and are more extensive in the mining industry than in all other industries combined. The following statement shows the particulars in relation to each group of the dislocations which commenced in each year from 1914 to 1921; the working days lost have been assigned to the year in which the dislocation commenced, and for this reason the figures differ from those in the previous table, which show the loss actually occurring during each year.

Year.	Dislocations.			Workers Involved.			Working Days Lost.		
	Mining.	Non-mining.	Total.	Mining.	Non-mining.	Total.	Mining.	Non-mining.	Total.
1914	220	93	313	56,372	18,884	75,256	732,294	179,478	911,772
1915	225	89	314	66,211	28,135	94,346	576,109	162,386	738,495
1916	209	135	344	129,920	27,182	157,102	649,292	258,458	907,750
1917	185	104	289	77,147	67,557	144,704	1,184,594	1,677,001	2,861,595
1918	106	46	152	39,246	8,406	38,652	104,751	101,077	205,828
1919	228	78	306	86,778	36,396	123,174	2,958,056	713,692	3,671,748
1920	351	60	411	109,464	41,554	151,018	316,823	652,566	969,389
1921	531	24	555	145,282	24,228	169,510	360,652	78,354	439,006

On 6th March, 1920, a dispute commenced in the building trades, in which the employees were agitating for a reduction of hours from 48 per week to 44, and for the abolition of Saturday work. A complete cessation of building operations did not occur, as the employees worked on five days per week, refusing only to work on Saturdays. On 1st May, 1921, the 44-hour week was applied throughout the industry by a proclamation which was issued upon the recommendation of the Special Court constituted under the Eight Hours

Act, and by this means the dispute, in so far as it related to a reduction of hours, was brought to a conclusion. However, on 7th May, 1921, the first Saturday after the 44-hour week came into operation, the employees persisted in their refusal to work on Saturdays, and maintained this attitude until 27th August, 1921, when they submitted to the employers. The number of workers involved in these two dislocations was 18,598, and the loss of working time from 6th March, 1920, to 2nd May, 1921, was 523,979 days, and from 7th May to 27th August, 1921, 68,118 days.

An important dislocation, also a result of a disagreement regarding hours of work, occurred in the shipping group on 17th December, 1920. The stewards ceased work upon the refusal of the shipowners to grant an alteration in their working time from 8 hours within 15 per day to 8 hours within 13½. The dispute lasted until 25th February, 1921, and caused a loss of 81,000 days.

The industrial dislocations which commenced during the five years 1917-1921 numbered 1,713, the number of workers involved was 627,058, and the working time lost in respect of these dislocations amounted to 8,147,566 days. The records of the previous quinquennium show particulars regarding 1,282 dislocations in which 410,742 workers were involved and 3,020,759 working days were lost, but the figures are exclusive of 26 dislocations, of which details are not available. Making allowance for this defect, it is apparent that there has been an extensive increase in industrial unrest during recent years.

It is difficult to obtain reliable information regarding the cost of industrial dislocations, especially during a period of abnormal industrial conditions and frequent changes in rates of wages, etc. An estimate of the losses in wages in each year since 1908 is shown below, the method adopted being as follows:—The working days lost were classified into the fourteen industrial groups for which the average rates of wages are shown subsequently in this chapter, the days being assigned to the year in which the dislocation commenced; the days lost in respect of each group in each year were then multiplied by the rate of wages which is the mean of the average rate for adult males in that group, as at the end of that year and the end of the previous year.

Year.	Working Days Lost.			Estimated Loss of Wages.		
	Mining.	Non-mining.	All Industries.	Mining.	Non-mining.	All Industries.
	Days.	Days.	Days.	£	£	£
1908	130,746	106,683	237,429	59,600	43,000	102,600
1909	1,969,920	47,047	2,016,967	923,400	17,300	940,700
1910	61,508	39,262	100,770	29,300	16,200	45,500
1911	246,875	110,346	357,221	120,900	43,800	164,700
1912	67,869	28,100	95,969	34,700	11,700	46,400
1913	237,577	129,196	366,773	123,700	57,100	180,800
1914	732,294	179,478	911,772	384,500	86,000	470,500
1915	576,109	162,386	738,495	308,500	74,700	383,200
1916	649,292	258,458	907,750	372,000	133,100	505,100
1917	1,184,594	1,677,001	2,861,595	730,500	879,400	1,609,900
1918	104,751	101,077	205,828	65,900	54,900	120,800
1919	2,958,056	713,692	3,671,748	1,990,600	420,100	2,410,700
1920	316,823	652,566	969,389	252,800	485,100	737,900
1921	360,652	78,354	439,006	317,100	66,600	383,700

The above quotations of estimated loss of wages are open to question in so far as the records are deficient in regard to the sex and age of the workers involved, therefore allowance has not been made for the proportion of women and juveniles; the proportion is small, however, as the dislocations in industries, in which women and juveniles are mainly employed, were relatively unimportant. Another factor for which allowance cannot be made is the extent to which losses in wages during a dislocation were compensated by higher rates of pay or increased activity after resumption of work, *e.g.*, in the coal-mining industry, where operations are affected in normal times by intermittency due to trade conditions or blocks in the transport system.

Information is given in the following table regarding the duration of the dislocations which originated during the year 1921 :—

Duration in Days.	Dislocations.	Workers Involved.	Working Days Lost.
Under 1 day    ...    ...    ...	43	8,724	4,922
One day    ...    ...    ...    ...	297	86,562	86,562
Over 1 and not exceeding 7 ...	184	49,573	144,754
„    7    „    „    14 ...	15	21,183	87,776
„    14    „    „    21 ...	6	1,736	26,087
„    21    „    „    28 ...	4	492	12,279
„    28    „    „    35 ...	2	466	14,970
„    35    „    „    42 ...	1	363	13,794
68 ...    ...    ...    ...    ...	1	40	2,720
82 ...    ...    ...    ...    ...	1	3	246
122 ...    ...    ...    ...    ...	1	368	44,896
Total    ...    ...	555	169,510	439,006

A very large proportion of the dislocations are of brief duration. The number of workers affected by dislocations lasting one day or less during 1921 was 95,286, and the loss of working days 91,484. Thus these brief dislocations accounted for approximately 61 per cent. of the total number, 56 per cent. of the workers involved, and 21 per cent. of the working days lost.

The causes of the disputes which led to dislocations in the mining industries and in the non-mining group are classified in the following statement. Dislocations arising from the employment of non-union labour are included in the category, “employment of persons, etc.”; but those pertaining to the

recognition of a union and the enforcement of union rules are classified under the head of "Trade Unionism."

Cause.	Mining.			Non-Mining.			All Industries.		
	Disloca- tions.	Workers in- volved.	Work- ing days lost.	Disloca- tions.	Workers in- volved.	Work- ing days lost.	Disloca- tions.	Workers in- volved.	Work- ing days lost.
Wages .. .. .	108	34,500	71,575	5	1,423	5,334	113	35,923	76,909
Hours .. .. .	41	10,522	19,118	3	18,966	69,181	44	29,488	88,299
Working conditions ..	192	48,418	89,635	3	232	256	195	48,650	89,891
Employment of persons or classes of persons ..	89	21,373	73,429	8	1,250	2,155	97	22,623	75,584
Trade unionism .. ..	19	8,120	76,354	..	..	..	19	8,120	76,354
Sympathy .. .. .	13	3,956	7,314	..	..	..	13	3,956	7,314
Miscellaneous .. ..	48	12,779	16,397	5	2,357	1,206	53	15,136	17,603
Not stated .. .. .	21	5,614	6,319	..	..	..	21	5,614	6,319
Total.. .. .	531	145,282	360,141	24	24,228	78,132	555	169,510	438,273

In the mining industries disagreements about working conditions caused the greatest number of dislocations and involved the greatest loss of working time. Next in numerical order were disputes in relation to wages, but they did not result in the loss of so much working time as those relating to trade unionism or to the employment of persons. In the non-mining group the important cause of dissension was the question of hours of work.

By extending the analysis of the causes of disputes over a period of eight years, it is found that in the mining industries 41 per cent. of the time lost was due to disagreement in relation to trade unionism. This subject was the point at issue in the strike of the Broken Hill metalliferous mine-workers in 1919-20, which involved a loss of over 2,706,000 days. Dislocations arising out of the question of hours of work were the cause of 19 per cent. of the time lost in the mining industries. In 1914-15 there was a protracted dislocation in connection with a claim for the abolition of the afternoon shift in the coal-mines, and a number of collieries in the northern district were closed. In 1916, when the employees were striving for a reduction of hours, there was a general strike in the coal-mines of the State. Disputes grouped under the heading of "Sympathy" were responsible for 15·3 per cent. of the time lost, and wages stands fourth on the list with 11·3 per cent.

In non-mining industries, on the other hand, wages was the subject of disputes which were responsible for greater loss than those arising from any other cause, viz., 34 per cent. of the total, and sympathetic strikes showed the high proportion of 24·2 per cent. The losses through disputes regarding working conditions and sympathy occurred for the most part during the big strike of 1917. The question of reduction of hours has been prominent amongst the industrial population during the last two years, and the principal dislocations relating to this matter are of recent occurrence.

Taking all classes of industries together, the experience of the last eight years shows that about one-fourth of the loss of working time was incurred

through disputes about trade unionism, and about one-fifth was classified under each of the headings—wages, hours, and sympathy.

Cause.	Working days lost, 1914-1921.			Per cent. of total time lost.		
	Mining.	Non-mining.	Total.	Mining.	Non-mining.	Total.
	Days.	Days.	Days.			
Wages ... ..	773,968	1,308,232	2,082,200	11·3	34·1	19·4
Hours ... ..	1,308,996	704,399	2,013,395	19·0	18·4	18·8
Working conditions ... ..	397,607	718,743	1,116,350	5·8	18·8	10·4
Employment of persons or classes of persons ... ..	322,345	120,691	443,036	4·7	3·2	4·1
Trade unionism ... ..	2,827,464	27,609	2,855,073	41·1	·7	26·7
Sympathy ... ..	1,055,474	928,763	1,984,237	15·3	24·2	18·5
Miscellaneous ... ..	168,137	23,543	191,680	2·4	·6	1·8
Not stated ... ..	28,147	150	28,297	·4	·0	·3
Total ... ..	6,882,138	3,832,130	10,714,268	100	100	100

Of the 555 dislocations which commenced during 1921, 480 were brought to a conclusion by direct negotiation between the parties, 6 were settled by arbitration, and 69 by other methods.

The following statement shows the workers involved and the time lost classified according to the results of the dislocations; 59 resulted in resumption of work with modified conditions, more or less in accordance with the workers' claims. In 382 no modifications were granted, and the results of the remaining 104 cases were not recorded.

Over 73 per cent. of the workers involved, and 64 per cent. of the time lost, were in respect of dislocations in which no modifications were granted.

Year.	Modification.			No Modification.		
	Disloca-tions.	Workers involved.	Working days lost.	Disloca-tions.	Workers involved.	Working days lost.
1914	120	23,822	286,308	158	40,205	613,465
1915	171	51,063	306,188	136	42,355	162,441
1916	152	49,708	621,017	156	99,050	244,234
1917	94	19,345	82,554	155	118,745	2,762,492
1918	31	7,889	17,251	89	22,431	151,574
1919	58	19,303	552,627	214	93,229	1,493,553
1920	60	13,004	84,567	271	103,166	191,361
1921	69	16,679	97,626	382	124,584	279,078



During the period of eight years reviewed above, 5,898,198 days were lost in respect of dislocations in which no modification of conditions was made, and the total time lost was three times greater than in respect of dislocations by which some modification was gained.

### INDUSTRIAL ARBITRATION.

The term "Industrial Arbitration" is used here in a broad sense to embrace all provision made by legislation for the adjustment of industrial relations between employers and employees, by arbitration, by conciliation, or by co-operation of employers and employees.

In New South Wales an arbitration system has been established under the State law, and since 1904 the Commonwealth Parliament has legislated with respect to industrial disputes extending beyond the limits of one State.

#### THE STATE SYSTEM OF INDUSTRIAL ARBITRATION.

The necessity for legislative action to obviate dislocations of industry and to regulate the conditions of employment became urgent during the period of industrial unrest which followed the curtailment of public and private expenditure in 1885, and culminated in the maritime and shearers' strikes of 1890. Acts were passed in 1892 and in 1899 with the object of providing means for the settlement of industrial disputes, but they proved ineffective, because the parties to a dispute were not compelled to submit their cases to arbitration nor, after submission, to abide by the award. The principle of voluntary arbitration was abandoned, therefore, and in 1901 the Industrial Arbitration Act was passed to constitute a Court of Arbitration to which the submission of trade disputes was compulsory. The jurisdiction of the Court extended to all industrial matters arising between employers and employees, including wages and working conditions. Provision was made for the registration of industrial unions, and for industrial agreements between employers and unions; strikes and lock-outs were prohibited.

This Act expired by effluxion of time in 1908, and was replaced in that year by the Industrial Disputes Act, which provided for the constitution of wages boards, as subsidiary tribunals, to determine the conditions in specified industries, their awards being subject to revision by the Court. The wages boards exercised jurisdiction over a wide range of industrial matters and, notwithstanding the title of the Act, their authority was not limited to cases in which a dispute had occurred.

The Act of 1908 was replaced in 1912 by the Industrial Arbitration Act of 1912, which is the basis of the existing State legislation, although the system has been modified by subsequent amendments.

In framing the statute efforts were made to remedy serious defects of the machinery established under earlier legislation, viz., delay in the hearing and determination of claims, and the overlapping of awards owing to the multiplicity of boards. The range of industries and callings for which boards might be constituted was defined by schedule, and the boards were arranged upon the basis of craft or calling, those relating to allied industries being grouped under one chairman. The objective of this arrangement was the maintenance of a number of subsidiary arbitration courts, each having

power to deal with a group of allied industries, but subject to the general control of the Court of Industrial Arbitration, which, in its supreme direction, would co-ordinate their work.

Experience showed, however, that this system failed to remedy defects noted above, and the Act was amended in 1916. Briefly, the practical effects of the amending Act were that the wages or industrial boards, as they were termed under the 1912 Act, ceased to operate, their functions were transferred to the Court, to which additional judges were appointed to expedite the determination of industrial matters, and the Court was empowered to codify awards. The repeal of the schedule defining and classifying the industries for which boards might be constituted, removed a restriction imposed upon the right of non-schedule industries to obtain an award.

The Act was amended further in 1918 to provide for the appointment of special courts to deal with cases affecting the Crown as employer and those relating to the coal-mining industry, and of deputy courts to exercise jurisdiction in proclaimed districts. The Board of Trade was established and other important amendments were made with the object of encouraging mutual co-operation between employers and employees for the adjustment of industrial matters, and the provisions for the repression of strikes were modified.

The Amendment Act of 1919 relates mainly to the extension of the arbitration system to the employees in the public service of the State, and the amending Act of 1920 to the living wage declarations of the Board of Trade.

The system of compulsory arbitration has been in operation in the State for over twenty years, and it has developed to such an extent that practically every important branch of industry has been brought within its scope. Throughout this period there was a persistent rise in prices, the upward movement being accelerated after the commencement of the war, and it reached a maximum towards the end of 1920. When prices were rising sharply during the war years, efforts of the industrial tribunals were directed towards the maintenance of a reasonable standard of living, and employers generally were able to meet the increased cost of wages, because conditions enabled them to obtain larger profits than in normal times; the spending power of the people was augmented by large war expenditure by the Government and high export prices for staple products; and, though the actual rates of wages did not rise in the same proportion as the cost of living, labour was in demand and there was little unemployment, so that employees shared to a large extent in the general prosperity.

A period of deflation commenced in 1920, with falling prices and lower profits from industry, and unemployment began to affect large groups of workers. Under these conditions the industrial arbitration system has become a subject of widespread criticism by both employers and employees, indicating that neither class is satisfied with its results, though apparently a definite plan has not been formulated for its amendment or abolition.

In view of this tendency it will be interesting to trace the development of the system since 1901, and the following statement has been prepared to show in a concise form the principal changes introduced by legislative enactment since that year. The persons named at the head of the columns were the Ministers who introduced the respective Arbitration Acts in Parliament.

## CHANGES IN THE ARBITRATION SYSTEM

1. Name of Act.	Industrial Arbitration, 1901. (Mr. B. R. Wise.)	Industrial Disputes, 1908 (2). (Mr. C. G. Wade.)	Industrial Arbitration, 1912. (Mr. G. S. Beeby.)
2. Nature of Tribunals.	Court of Arbitration.	Industrial Court. Wages or Industrial Boards.	Court of Industrial Arbitration. Industrial Boards. Special (Demarcation) Boards.
3. How Tribunals are brought into existence.	Court constituted by Act.	Court constituted by Act. Boards by Minister on recommendation of Court.	Court constituted by Act. Industrial Boards by Minister on recommendation of Court. Special Boards by Court.
4. Scope of Acts.	Industrial disputes in any industry, except domestic service in private houses.	Industries as defined by Schedules of Act to which amendments and additions might be made by Parliament.	Groups of industries as defined by schedule, to which additions and alterations might be made by Parliament.
5. Jurisdiction of Tribunals (main provisions only).	To determine cases of industrial disputes, including matters relating to work, privileges, rights, etc., and wages, hours, sex, age, and other conditions of employment. Court could declare "common rule" binding on all persons engaged in the industry to which it applied.	Existence of dispute not necessary for exercise of jurisdiction. <i>Boards</i> were authorised to decide all disputes, and to fix minimum wages and rates for piecework and overtime, number and proportionate number of apprentices, to decide claims for preference to unionists, to determine any industrial matter, and to rescind or vary their awards. <i>Court</i> exercised appellate jurisdiction and regulated appointment of Boards, etc. Awards were binding on all persons engaged in the industry concerned.	<i>Court</i> authorised to exercise powers, etc., of Boards or Chairmen of Boards and Conciliation Committees, of Registrar or Industrial Magistrates, and to vary or rescind awards of Boards. <i>Industrial Boards</i> authorised to fix minimum wages, etc., hours, overtime rates, number and proportionate number of apprentices, to declare preference, to determine any industrial matter, to vary or rescind awards. <i>Special Boards</i> determined questions of demarcation of callings. Awards binding on all persons engaged in the industry concerned.
6. How trade is brought under review.	Dispute cases only. Reference to Court by industrial union, or (in cases where parties or some or one of them not a member of industrial union) by the Registrar of the Court.	Reference to Board by Court or application to Board by employers or employees.	Reference to Board by Court or by Minister, or application by employers of at least twenty employees, or by industrial union of employees.
7. President or Chairman of Tribunal.	Judge of Supreme Court, nominated by Governor.	<i>Court</i> .—Judge of Supreme or District Court. <i>Boards</i> .—Judge of Supreme, District, or Industrial Court, or person nominated by Industrial Court (if parties agreed on Chairman he was appointed).	<i>Court</i> .—President of Industrial Court under previous Act. Successor to be appointed by Governor from Judges of Supreme or District Courts or barrister of five years' standing. <i>Industrial Boards</i> .—Appointed by Minister on recommendation of Court (same chairman presided over all Boards in same group of industries). <i>Special Boards</i> .—Appointed by Court.
8. Number of members of Tribunal.	<i>Court</i> .—President and two members.	<i>Court</i> .—Judge. <i>Boards</i> .—Chairman and not less than two nor more than four other members (equally representing employers and employees).	<i>Court</i> .—Judge. <i>Industrial Boards</i> .—Chairman and two or four others (equally representing employers and employees). <i>Special Boards</i> .—Chairman and number of other members equally representing parties as fixed by Court.

## OF NEW SOUTH WALES—1901-1922.

Industrial Arbitration, 1912, and Amendment, 1916. (Mr. G. S. Beeby.)	Industrial Arbitration, 1912. Amendments, 1916 and 1918 (2). (Mr. G. S. Beeby.)	Amendment, 1919. (Mr. A. G. James.)	Amendment, 1920. (Mr. G. Cann.)
Same as in 1912.	Board of Trade. Other tribunals as in 1912.	... ..	... ..
Same as in 1912.	Board of Trade constituted by Act. Other tribunals as in 1912.	... ..	... ..
All industries. (Repeal of Schedule removed restriction on right of industry to be brought under Act.)	All industries, except Police and employees under Public Service Acts. Employees in rural districts are entitled to be paid rural living wage declared by Board of Trade Act; but, unless already under award, are not otherwise subject to provisions of Act.	Employees under Public Service brought within scope of Act.	... ..
Court and Boards as in 1912, and additional power given to Court to exercise all functions, etc., of Boards (Industrial and Special), and to codify awards, and Boards not to exercise their jurisdiction except by special direction of the Court. (In practice the operations of the Boards have since been restricted to Broken Hill district, where they are under the chairmanship of stipendiary magistrate.)	Court and Boards as under previous Acts, except that maximum wage which may be awarded is £10 per week, and minimum the living wage declared by the Board of Trade. Board of Trade was authorised to determine living wages for adults (male and female) and for rural workers, and to exercise control of apprenticeship. (Regulations re apprenticeship have not yet been issued.)	Jurisdiction in relation to Public Service is limited to matters of wages, overtime, allowances, and the variation and rescission of awards. Board of Trade may refrain from declaring rural living wage in view of conditions of the industries.	Board of Trade may make declarations of living wage, notwithstanding the existence of declarations (previous Acts seem to imply twelve months currency of a declaration.)
Same as in 1912.	Same as in 1912.	... ..	... ..
Same as in 1912.	Court and Boards the same as in 1912. President of Board of Trade—a Judge of Industrial Court appointed by Governor.	... ..	... ..
Court.—Judge and three additional Judges (one or more Judges constitute a Court). Boards.—Same as in 1912.	Board of Trade.—President, Deputy President and four Commissioners (and one or more additional Commissioners to represent rural industries). Court and other Boards same as in 1916.	... ..	... ..

## CHANGES IN THE ARBITRATION SYSTEM

	(1901).	(1908).	(1912).
9. How ordinary members are appointed.	By 'Governor or recommendation of union of employers and of employees respectively.	<i>Boards</i> .—On recommendation of Industrial Court.	<i>Boards</i> .—By Minister on recommendation of Court.
10. Decisions— How enforced.	By Industrial Court, Court of Petty Sessions, or by Inspectors under Factories Act.	By Industrial Court or Courts of Petty Sessions.	By Industrial Registrar and Industrial Magistrates.
11. Duration of decision.	Practice of Court was not to express term so award probably endured till abrogated by Court.	For term specified not less than one year nor more than three years.	For term specified not greater than three years.
12. Appeal against decision.	No appeal.	From Board (of which Chairman was not a Judge) appeal to Court, otherwise no appeal.	From Court—no appeal. From Board—appeal to Court.
13. Preference to Unionists.	Could be declared.	Could be declared.	Could be declared.
14. Provision against strikes and lock-outs.	Penalty, £1,000, or two months imprisonment for strike or lockout before reasonable time elapsed for reference of dispute to Court; or during pendency of any proceedings in Court in relation to a dispute.	Penalty, £1,000, or two months imprisonment (trade or industrial union liable for £20 of penalty imposed on member convicted). Under Amending Act, 1909, stringent provisions to repress strike or lockout.—Police authorised to enter buildings used for such purpose.—Meetings for purposes of strike or lockout affecting supply of a necessary commodity declared unlawful.	<i>Lockout</i> .—Penalty, £1000. <i>Strike</i> .—Penalty, person £50 (of which union may be ordered to pay £20). <i>Union</i> , £1,000 and suspension and cancellation of registration and of award. Court may grant injunction to prohibit strike or lockout; penalty for disobeying, six months imprisonment.
15. Special provision for Conciliation.	Agreements between industrial unions or between unions and employees have same effect as award, if registered.	Duty of Chairmen of Boards to endeavour to conciliate parties. Agreements between trade unions and employers, if registered, were binding on the parties.	Minister authorised to constitute conciliation commissioners for three colliery districts and other districts with 500 mining employees. Special Commissioner empowered to convene compulsory conference if dislocation pending. Registered agreements between employees' unions and employers binding on the parties.
16. Determination of Basic Wage.	No basic rate fixed; each case determined on its merits; apparently decision was influenced by conditions of industry. In 1905 President indicated that consideration was given also to living wage on family basis and to ruling rates in the industry.	No basic rate determined, but decisions were influenced chiefly by Harvester judgment of 1907: 42s. per week. In November, 1911, Court stated rate should be raised to 45s. per week.	Basic rate was not determined. Court conducted an inquiry of needs of unskilled worker 48s. per week. The rate was in 1916 to £2 15s. 6d.

OF NEW SOUTH WALES—1901–1922—*continued.*

(1916).	(1918).	(1919).	(1920).																					
Court.—Additional Judges by Governor.	Board of Trade.—By Governor.	...	...																					
Boards.—By Minister from persons nominated by employers or by industrial unions of employees respectively.	Court and other Boards same as in 1916.	...	...																					
Same as in 1912.	Same as in 1912.	...	...																					
Same as in 1912.	For term specified not greater than three years and thereafter till rescinded or varied.	...	...																					
From Court—no appeal. From Board—appeal to Court.	From Court constituted by single Judge—appeal to full Court constituted by three Judges. From Board to Court. From Board of Trade—No provision for appeal.	...	...																					
Could be declared.	Can be declared.	...	...																					
Same as in 1912.	Lockout.—Penalty, £1,000. Following strikes and no others declared illegal :—Strikes by Crown or local government employees or by persons engaged in military or naval contracts; employees under award or agreement (but union by majority vote may elect to render award no longer binding if it has been in operation for twelve months); strikes commenced prior to fourteen days' notice to Minister. Secret ballot may be ordered. Penalty for illegal strike £500.	...	...																					
Same as in 1912.	Minister may appoint conciliation committees for three industrial districts, also other districts in which 500 employees work in or about mines; also for any other occupation or calling with over 100 employees. Compulsory conferences in case of dislocation, actual or pending. Registered agreements as in 1912.	...	...																					
until 1914, when President of and fixed a living wage on basis with wife and two children, viz.—raised in 1915 to £2 12s. 6d., and	Board of Trade adopted standard used by Court in 1914 in determining living wage for men. Women's living wage first declared in 1918 is based on needs of single women with no other responsibilities and living in lodgings :— <table><tr><td></td><td>Men.</td><td>Women.</td></tr><tr><td></td><td>s. d.</td><td>s. d.</td></tr><tr><td>1918</td><td>60 0</td><td>30 0</td></tr><tr><td>1919</td><td>77 0</td><td>39 0</td></tr><tr><td>1920</td><td>85 0</td><td>43 0</td></tr><tr><td>1921</td><td>82 0</td><td>41 0</td></tr><tr><td>1922</td><td>78 0</td><td>...</td></tr></table> Rural workers (male):—First declaration October, 1921, viz., 66s. per week from which deductions up to 24s. are allowed for board and residence.		Men.	Women.		s. d.	s. d.	1918	60 0	30 0	1919	77 0	39 0	1920	85 0	43 0	1921	82 0	41 0	1922	78 0	...	...	...
	Men.	Women.																						
	s. d.	s. d.																						
1918	60 0	30 0																						
1919	77 0	39 0																						
1920	85 0	43 0																						
1921	82 0	41 0																						
1922	78 0	...																						

*Industrial Unions.*

A union of employees must obtain registration as an industrial union before applying for an award to regulate the conditions of an industry, and organisation for this purpose has been effected or is proceeding in connection with practically all the industries of the State except certain rural occupations and domestic service in private houses.

Registration as an industrial union of employees is granted only to organisations registered as trade unions under the Trade Union Act of 1881. In order to prevent the inconvenience which is likely to arise from the registration of a number of unions representing the same industrial interests, registration is refused if the members may be protected in industrial matters by a previously registered union. An exception is made in the case of Crown employees, who may obtain registration, notwithstanding the existence of other organisations of persons engaged in similar occupations.

Registration as a union of employers may be granted to any person or group of persons employing not less than fifty employees, and prior registration under the Trade Union Act is not prescribed, as in the case of unions of employees.

*Industrial Boards.*

Industrial Boards are still constituted in accordance with the provisions of the Industrial Arbitration Act, but exercise their functions only in respect of applications and references which the Court may commit to them for special reasons. This action by the Court is unusual, except in regard to cases in the district of Broken Hill, where on account of distance from the Court the local boards continue their activities.

An Industrial Board consists of a chairman and two or four other members equally representing the employers and employees, and may be constituted for any industry or group of industries on the recommendation of the Court, and the Court may constitute special boards to determine questions of demarcation.

Where employers or employees in the industries or callings consist chiefly of women, members may be appointed who are not engaged in those industries or callings; otherwise the representative board members are men intimately connected with the particular industry or calling. At 30th June, 1921, there were 271 boards

*The Court of Industrial Arbitration.*

The Court of Industrial Arbitration is a superior Court and a Court of Record, governed in procedure and decisions by the dictates of equity and good conscience. Judges of the Court are appointed permanently by the Governor, and the Court is constituted by a single judge or, in certain cases, by two or more judges sitting together.

In order to facilitate the determination of technical trade matters the Court may elect to sit with assessors representing the interests of each of the parties, and matters relating to any log of prices or other basis of payment may be committed for determination and report to the assessors, sitting without a judge. The Court must sit as a Special Court with assessors when hearing matters exclusively affecting the Crown as employer, or persons employed exclusively by the Crown, or shire or municipal employees.

In any district proclaimed by the Governor a deputy Court may be constituted by a judge, or by a chairman nominated by the Court, with or without assessors. A deputy Court has been constituted for the district of Newcastle.

*Jurisdiction of the Industrial Tribunals.*

Proceedings before an industrial tribunal are initiated usually upon the application of employers of not less than twenty employees in any industry or calling, or by an industrial union of employees; matters may be referred also by the Ministerial head of the Department of Labour and Industry.

Where the public interests are likely to be affected the Crown may intervene in any proceedings before a board or the Court, or may appeal from an award.

Awards are binding on all persons engaged in the industries or callings, and within the locality covered, for a period not exceeding three years specified therein, and after such period until varied or rescinded. Awards take effect generally fourteen days after publication, but the Court in its discretion may make an award retrospective.

Variations of awards may be made only on application to a board or by the Court. It is a general rule of the Court that awards should not be varied during their currency, except in special cases, or by consent of the parties. The Amending Act of 1919, however, provides that applications for variation must be considered whenever a living wage declaration has been made by the Board of Trade.

Appeal from an award of a board lies to the Court, but the pendency of an appeal does not suspend the operation of the Award. Appeal from an award of a single Judge lies to the Court constituted by three judges. Decisions of the Full Court are final.

*Industrial Agreements.*

The practice of collective bargaining first received statutory sanction under the Industrial Arbitration Act, 1901, when industrial unions were empowered to make with employers written agreements, which became binding between the parties when filed in the prescribed manner.

The authority to make agreements was continued under later enactments. Under the Industrial Arbitration Act of 1912, the provision for making and registering agreements relating to industrial matters, previously limited to industrial unions, was extended to trade unions of employees. The maximum term for which an agreement may be made is five years, but it continues in force after the expiration of the specified term until varied or rescinded, or terminated after notice by a party thereto. No industrial agreement may be made providing for wages lower than the living wages declared by the Board of Trade, and whenever a living wage is declared by the Board during the currency of an agreement, the Court may vary its wage provisions.

The following statement shows the number of agreements filed in each year since 1902. In December, 1921, there were 119 agreements in force:—

Year.	Agreements Filed.	Year.	Agreements Filed.	Year.	Agreements Filed.
1902	} 28	1909	28	1916	51
1903		1910	21	1917	43
1904	18	1911	27	1918	39
1905	6	1912	45	1919	49
1906	13	1913	36	1920	76
1907	11	1914	50	1921	56
1908	12	1915	33		



Collective bargaining is practised more extensively than is indicated by the figures in the table, and the terms of many awards are arranged, wholly or in part, by the parties before the case is taken before the Court.

In pursuance of the policy of encouraging collective bargaining it is provided by the Amending Act of 1918 that so far as is consistent with the maintenance of industrial peace, the Court or a board may deal with wages and hours of employment only, leaving all other matters to shop committees, conciliation committees, industrial councils or voluntary committees formed for the purpose of adjusting the industrial relationship of employer and employee.

#### *Conciliation.*

In October, 1911, the Minister for Labour and Industry initiated an active policy of conciliatory intervention between industrial disputants, and the Investigation Officer of the Department of Labour and Industry was deputed to act as mediator wherever disputes or dislocations were known to be pending.

Statutory authority was given to this process of intervention with the initiation of the Industrial Arbitration Act, 1912, and a Special Commissioner for Conciliation was appointed on 1st July, 1912, but the range of his work was limited on account of a judgment delivered in the Industrial Court in March, 1914, to the effect that parties to a dispute could not be compelled to meet in conference when a strike or a lockout had actually occurred. This limitation was removed by the amending act of 1918.

The processes of conciliation are conducted with a considerable amount of success. In the majority of cases in which conferences are held, agreement is reached before dislocation occurs, and many disputes are settled during preliminary investigations by the Commissioner or the departmental inspectors.

The Industrial Arbitration Act provides also for the notification by proclamation of certain industrial districts for which may be constituted conciliation committees, consisting of a chairman and two or four members equally representing employer and employees. The chairman may be a judge appointed by the Minister, or a person chosen by the unanimous agreement of the other members, or appointed by the Governor.

Conciliation committees may be constituted also for any other district in which more than 500 employees are engaged in the mining industry, and for any other occupation in which more than 100 employees are employed.

A conciliation committee may inquire into any industrial matter within its district; it has no compulsory powers, but if an agreement is made and registered it has the effect of an industrial agreement.

#### *Awards by Boards and by the Court.*

\* During the year ended 30th June, 1921, the Industrial Boards made nine principal awards and one award of variation, and the Court of Industrial Arbitration made 104 principal awards and 390 variations; at the end of the period there were 370 awards in force.

The number of awards made by the boards and by the Court during each of the last six years is shown below :—

Year ended 30th June.	Industrial Boards.		Awards made by Boards.		Awards made by Court of Industrial Arbitration.	
	In existence at 30th June.	Cost during the Year.	Principal.	Variation.	Principal.	Variation.
		£				
1916	233	14,211	151	135	...	66
1917	237	12,900	169	99	7	127
1918	237	1,543	18	15	75	116
1919	238	277	3	2	106	88
1920	252	345	5	1	136	269
1921	271	189	9	1	194	390

*Enforcement of Awards and Industrial Agreements.*

Since 1901 breaches of awards and industrial agreements have constituted grounds for prosecution of offences in the Arbitration and lower Courts of the State, the penalties recoverable being subject to some limitations.

In May, 1911, an Investigation Officer was appointed in the Department of Labour and Industry to receive and record complaints as to breaches of awards and agreements, and as to failures to comply with obligations imposed under the Act, to review the reports of inspectors, and to direct prosecutions consequent thereon.

During the year ended 30th June, 1921, 1,638 complaints as to breaches of awards, etc., were received at the Investigation Office; 443 prosecutions were initiated, and 426 convictions were recorded.

Proceedings before the Court of Industrial Arbitration for the enforcement of the provisions of the Industrial Arbitration Act included 8 cases in respect of strikes during 1920-21, and 1 conviction was recorded.

The following statement relates to cases under the Industrial Arbitration Acts, heard by the Industrial Magistrates during the two years ended 30th June, 1921 :—

Classification.	1920.		1921.	
	Cases.	Con- victions.	Cases.	Con- victions.
Non-payment of Wages Awarded ...	137	37	152	76
Non-payment of Fines and Subscrip- tions to Union ...	351	158	393	161
Breach of Award or Industrial Agree- ment ...	347	268	549	448
Failure to Keep Time-sheets and Pay- sheets of Employees ...	40	36	94	91
Failure to Exhibit Copy of Award ...	22	21	76	73
Obstructing Inspector... ..	2	2	7	3
Total ... ..	899	522	1,271	852

THE BOARD OF TRADE.

The Board of Trade was created in June, 1918, under the Industrial Arbitration (Amendment) Act of that year. It is composed of a president (who is a judge of the Court), a deputy president, four commissioners, and four additional commissioners to represent rural industries. The

last-mentioned sit with the Board only when matters directly affecting rural industries are under consideration. The Minister, as an associate commissioner, may take part in the deliberations of the Board, but may not vote in connection with its determinations.

In its investigations the Board has the powers of a Royal Commission. It exercises important functions in relation to industrial matters. Its administrative powers relate to the determination of the living wage, and to the regulation of apprentices and apprenticeship; otherwise its powers are advisory. Its living wage declarations are made after public inquiry as to the increase or decrease in the cost of living, and the rates declared for each sex are the lowest which may be prescribed by industrial awards or agreements. The declarations may be varied or rescinded at any time.

A separate public inquiry must be made into the cost of living of employees engaged in rural occupations, and a separate declaration as to the living wage of such employees and deductions therefrom for board and residence, and for any customary privileges or payments in kind. The Board may refrain from declaring the living wage for these employees should it think fit to do so after considering the condition of the rural industries and their ability to bear additional burdens in wages.

The Act imposes on the Board certain other functions, among which is that of encouraging and creating councils of employers and employees to provide for proper apprenticeship and the welfare of juvenile labour.

#### CROWN EMPLOYEES UNDER ARBITRATION.

Under the State arbitration system, Crown employees, with the exception of the police, have access to the industrial tribunals for the settlement of disputes and the regulation of the conditions of their employment. In the case of the employees under the Public Service Board the right was extended to them by the amending Act of 1919, but the jurisdiction is limited, and awards may be made only in respect of wages, payment for overtime, deductions for board, residence, or customary privileges or payments in kind, and the rescission and variation of awards. Other matters relating to employment in the public service of the State are regulated by the Public Service Board.

A clause of the Industrial Arbitration Act states that the wages fixed for employees of the Government must be not less than those paid to other employees doing substantially the same class of work. The fact that the employment is permanent and that additional privileges are allowed in the service of the Government may not of itself be regarded as a substantial difference.

#### THE COMMONWEALTH SYSTEM OF INDUSTRIAL ARBITRATION.

The Constitution of the Australian Commonwealth empowers the Federal Parliament to make laws with respect to conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any State. The first Act was passed in 1904, and the existing legislation is embodied in the Commonwealth Conciliation and Arbitration Act, 1904-21, and the Industrial Peace Acts, 1920.

The main objects of the Conciliation and Arbitration Act are:—  
(a) To prevent lockouts and strikes in relation to industrial disputes;  
(b) to constitute a Court of Conciliation and Arbitration having jurisdiction for the prevention and settlement of industrial disputes;  
(c) to provide for the exercise of the jurisdiction of the Court by conciliation, with a view to amicable agreement between the parties; (d) in default of

amicable agreement between the parties to provide for the exercise of the jurisdiction of the Court by equitable award; (e) to enable States to refer industrial disputes to the Court, and to permit the working of the Court and of State industrial authorities in aid of each other; (f) to facilitate and encourage the organisation of representative bodies of employers and of employees, and the submission of industrial disputes to the Court by organisations, and to permit representative bodies of employers and of employees to be declared organisations for the purposes of this Act; (g) to provide for the making and enforcement of industrial agreements between employers and employees in relation to industrial disputes.

Organisations of employers and of employees, representing at least 100 employees, may be registered under the Act on compliance with prescribed conditions, registration being a necessary qualification to entitle unions to submit disputes to the Court, or to be represented in proceedings relating to disputes.

The Court of Conciliation and Arbitration consists of a President and Deputy-Presidents appointed by the Governor-General. The President is appointed from among the Justices of the High Court. The Deputy-Presidents are appointed from the Justices of the High Court, Judges of the Supreme Court of a State, or barristers or solicitors of any of these Courts of not less than five years standing; they exercise such powers and functions of the President as the Governor-General assigns.

The Court or the President acts according to equity, good conscience, and the substantial merits of the case, without regard to technicalities or legal forms, and is not bound by rules of evidence.

The President is charged with the duty of endeavouring to reconcile the parties to industrial disputes, and to prevent and settle industrial disputes in all cases in which it appears to him that his mediation is desirable in the public interest. In the discharge of these duties he may convene compulsory conferences.

The Court deals with industrial disputes certified by the Industrial Registrar as proper to be determined by it in the public interest, or submitted by an organisation by plaint, or by a State industrial authority, or referred by the President after a compulsory conference at which no agreement has been reached.

After a case has been submitted to the Court, the Registrar or a party to the dispute may apply to the High Court of Australia to decide questions of jurisdiction and of law. This provision was made in 1914 to obviate difficulties arising when these matters were challenged subsequent to the determination of a case by the industrial tribunal.

The Court endeavours to induce the settlement of disputes by amicable agreement, or, failing an agreement, determines the disputes by award. Industrial agreements, when filed, are binding on the parties thereto. The awards and agreements are made for a specified period up to a maximum of five years, and after the expiration of the definite period an award continues until a new award is made, unless the Court orders otherwise; agreements continue unless rescinded, or terminated by notice.

Awards are binding only on the parties to a dispute, and the Court has no power to make an award a common rule of the industry, as the clause of the Act authorising it to do so was declared by the High Court to be *ultra vires*.

The powers conferred upon the Federal Court include the power to vary orders or awards, to impose penalties for breach or non-observance of orders, etc.; to refrain from determining a dispute if it appears that it should be dealt with by a State industrial authority, or that further proceedings by the Court are not desirable in the public interest; to refer any matters temporarily to a conciliation committee consisting of an equal number of representatives of employers and employees; and to grant preference to members of organisations.

The Court may exercise any of its powers on its own motion, or on the application of any party to a dispute, or of any organisation or person bound by an award; but an order or award may not be varied and a question may not be reopened except on the application of an organisation or person affected or aggrieved thereby, or of the Attorney-General.

The Court may appoint Boards of Reference to deal with matters relating to an award, and their appointment tends to promote mutual understanding between employers and workers for the adjustment of industrial relations.

The Industrial Peace Acts provide for the formation of a Commonwealth Council of Industrial Representatives, consisting of a chairman, chosen by the other members, and six or eight persons equally representing the employers and the recognised organisations of employees. The Council is empowered to consider matters affecting industrial peace, to conduct inquiries, and to summon conferences in connection with industrial disputes brought before it by a member or referred to it by the Governor-General, and to investigate industrial matters. Similarly District Councils may be constituted for any State or part of the Commonwealth. Action has not yet been taken for the formation of any of these councils.

The Industrial Peace Acts provide also for the appointment of special tribunals with powers to deal with industrial disputes similar to those exercised by the Court of Conciliation and Arbitration or by the President of the Court. A special tribunal consists of an equal number of representatives of employers and employees, with a chairman chosen by them, or, in default, appointed by the Governor-General. A tribunal, or the chairman thereof, or the Minister, may convene compulsory conferences for the purpose of preventing or settling industrial disputes; if, at a conference, agreement is not reached as to the whole of a dispute it may be referred to the special tribunal. Disputes may be referred also by the parties thereto.

In relation to a special tribunal, local boards may be appointed to exercise jurisdiction within defined limits for the settlement or prevention of disputes, their determinations being subject to review by the special tribunal.

An award or order of a special tribunal, or an agreement made at a conference and filed with the Industrial Registrar, is binding on the parties, and may be enforced as an award of the Court, and the Court may not make an order or award inconsistent with a determination of a special tribunal or of a local board.

Special tribunals under the Industrial Peace Act have been appointed in connection with the coal and shale and the coke industries.

At 30th June, 1921, there were 121 Commonwealth awards and 657 industrial agreements in force, of which 79 awards and 201 agreements applied in New South Wales.

*Relation between State and Commonwealth Systems.*

It is prescribed by the Commonwealth Constitution Act that if a State law is inconsistent with a Federal law, the latter prevails, the former becoming inoperative so far as it is inconsistent, and the same principle is applied by the Commonwealth Conciliation and Arbitration Act to awards and orders of the Federal and State industrial authorities. There is, however, no organic connection between the industrial systems; and while the industrial authorities have adopted generally the same broad principles for the promotion of industrial peace and the maintenance of standard conditions, fundamental differences in legislation prevent them from co-ordinating their methods and practices and from blending their determinations into an industrial code for the guidance of employees and employers in all branches of industry throughout the Commonwealth.

For instance, the Federal jurisdiction is limited to disputes, and Federal awards apply only to the employers actually concerned in the dispute and the members of the union affected who are employed by them, while the State exercises jurisdiction over a much wider field of industrial relations, and its awards bind all the persons engaged in the industry. Again, the Federal Court assesses a basic rate for each case in which minimum wages are to be fixed, but the State Court is bound by the living wage rate declared periodically by the Board of Trade. A difference in the basic rates is liable to cause a disturbance of the distinctions in grade, as expressed by wages, which have been recognised for many years amongst skilled workers, and such a breach of long-established custom is in itself a potent factor in promoting dissatisfaction.

A striking example of divergence in the method of determining minimum rates is afforded by a case which was decided by the Federal Court in June, 1921, relating to the Amalgamated Society of Engineers, a craft union whose members are employed not only in engineering establishments, but in numerous other branches of industry throughout the Commonwealth. During the war, when the cost of living was increasing rapidly, it was a practice of the Federal and of the New South Wales Courts to raise the basic wage and not to increase the secondary wage, *i.e.*, the margin above the basic rate awarded for skill, etc. Since the war the State tribunal has adhered to this rule, but in the Engineers' case the Federal Court decided to increase the secondary wage in the same proportion as the basic rate, in order to preserve the true margin between the skilled and the unskilled worker.

The extent to which conditions of employment in State industrial undertakings should be immune from interference by the Federal industrial authority is another phase of the matter which has been the subject of much discussion. It has been established by High Court decision, in a case relating to taxation by a State of the salaries of Commonwealth employees, that the Commonwealth in its jurisdiction is immune from State interference. In the Railway servants' case this principle was applied reciprocally, and the High Court decided that the Commonwealth Conciliation and Arbitration Act should not apply to disputes between the Governments of the States and State railway employees. In a subsequent case (the Amalgamated Society of Engineers) this judgment was overruled.

At conferences between the Prime Minister of the Commonwealth and the State Premiers efforts have been made to devise a means of preventing the overlapping of the jurisdiction of the Federal and State systems of arbitration. In July, 1921, it was proposed that the Commonwealth should pass laws excepting from the jurisdiction of the Federal Court all employees

of a State or of a State instrumentality, and all industries except Federal industries; and that the States should pass laws referring to the Federal Parliament the power to legislate with respect to (a) the establishment of a combined Court of Commonwealth and State judges to determine the basic wage and the standard hours in any or all industries; (b) industrial matters as regards Federal industries; (c) the establishment of an Industrial Court of Appeal with jurisdiction to determine appeals relating to Federal or State awards with the object of harmonising conflicting or competing awards or determinations in different States.

Resolutions embodying these proposals were carried by the Conference, with the reservation that the Commonwealth and the States would not finally commit themselves until they had had an opportunity of conferring with representatives of labour and of the employers.

#### HOURS OF WORK.

The 8-hour day has been recognised for many years as the standard working day in New South Wales, although the standard is more correctly expressed as the 48-hour week, the usual working time being  $8\frac{3}{4}$  hours on 5 days and  $4\frac{1}{4}$  hours on Saturday, though some factories complete the week's work in 5 days, leaving Saturday a whole holiday. The 8-hour principle was established in 1855 when, after a strike, it was conceded to the operative masons, and the movement spread gradually until 48 hours became the standard maximum in the majority of industries.

Since 1896 the Factories and Shops Act has prohibited the employment in factories of youths under 16 and of women for more than 48 hours in any week, though overtime not exceeding 3 hours in any day is allowed on 30 days in a year, or by written permission of the Minister, on 60 days. Hours of employment in shops are restricted by the Early Closing law which came into operation in 1900. Except in the case of specified shops, only one late shopping night is allowed, when the closing hour must not be later than 10 o'clock; on four days a week the shops must close at 6 o'clock, and on one day at 1 o'clock. In the Metropolitan and Newcastle districts, and in the country shopping districts in the county of Northumberland, the shops are subject to the Saturday Half-holiday Act, and the late closing night is on Friday, and the 1 o'clock closing on Saturday; in other districts the half-holiday is either on Wednesday with the late night on Saturday, or on Saturday, with the late night on Friday.

In regard to awards and agreements under the Industrial Arbitration Acts the provisions of the Eight Hours Acts must be observed. The principal Act passed in 1916 provides that the working hours must not exceed the following:—Mining Industries—workmen underground—Coal: Fireman, examiner, etc., 96 hours in 14 days; men engaged in handling and transit of coal, 48 hours in 6 days; others, 8 hours during 24. Metalliferous: 8 hours during 24 hours, or 88 hours in 14 days. In underground occupations a shift may not exceed 6 hours if, during 4 hours, the temperature is above 81 degrees Fahrenheit. Other Industries.—(1) 8 hours per day on 6 days, (2) 48 hours per week, or (3) 96 hours in 14 days—as determined by agreement or award.

In nearly all the important industries the hours of work were fixed by the industrial awards and agreements; special rates must be paid for time worked in excess—usually 25 or 50 per cent., and in some trades 100 per cent. higher than the normal rate of wages. Until recently the standard working week of 48 hours was observed generally, but a shorter working week

was prescribed for those trades which are recognised as unhealthy, such as rock-chopping and sewer-mining—for which the hours vary according to the working conditions, the minimum being 25 per week—stone-masonry, and metalliferous mining (underground); and for industries in which the majority of workers are women, such as the clothing trades. The workers whose hours exceeded 48 per week were mainly in the domestic group, *e.g.*, hotel, club, and restaurant employees; in the transport group, *e.g.*, carters distributing food supplies; and in factories involving continuous process where seven shifts of 8 hours were allowed.

In the railway, tramway, and ferry services the prescribed hours were usually 96 per fortnight, and in the coal-mining industry the hours were fixed by a special tribunal in 1916 as follow:—Eight hours bank to bank, inclusive of one-half hour for meal time, on Monday to Friday, and six hours bank to bank, inclusive of one-half hour for meal time, on Saturday, Sunday, and holidays, the usual number of shifts being eleven per fortnight.

For many years employees in the building trades have been striving for a reduction of the standard working time, and in May, 1920, some of the building trades and iron trades unions made a claim for the abolition of Saturday work. In September, 1920, the State Government appointed a judge of the Court of Industrial Arbitration, who is also the President of the Board of Trade, as a Royal Commissioner to inquire into the effect of a reduction of the working hours to 44 per week in the iron trades and the building trades in the county of Cumberland, and in all industries subject to the jurisdiction of the State Court of Industrial Arbitration. In his report the Commissioner favoured the reduction of hours to 44 per week in those trades, but recommended that the change should not be brought into operation in the iron trades for a period of six months on account of a shortage of skilled mechanics.

For each industry the Commissioner urged the formation of an industrial council representative of the employers and the workmen to co-operate for the better organisation of the industry, so that any diminution of output resulting from the reduction of working time might be recouped by the creation of more intimate relationship between the management and the workers, as well as by improved methods of production.

With reference to Saturday work it was recommended that the hours be 8 on 5 days and 4 hours on Saturday, with the proviso that it may be agreed between any employer and his workmen, or prescribed by award for any industry, that the time be worked in 5 days of  $8\frac{1}{2}$  hours.

In consequence of this report the Eight Hours Act was amended in December, 1920, to provide for the constitution of a special court by a judge of the Court of Industrial Arbitration to inquire into the working hours in any industry within its jurisdiction upon the application of the employees' unions, and to consider applications for a reduction of working hours. The Court has no power to make an award and its recommendations are applied by proclamation to the industry concerned, the provisions of the proclamation being binding in the same manner as an industrial award. Unless it is proclaimed to the contrary, wages fixed by award upon a weekly basis may not be reduced by reason of a proclaimed reduction in hours, and wages fixed upon a daily or hourly basis must be increased so that each employee working full time, as reduced, will receive the same amount of wages as for working full time under the award.

The Special Court was constituted in February, 1921. At a preliminary sitting the Judge announced his intention of adopting the standard of 44 hours per week, and the onus of proving the necessity of working longer hours



lay on the employers concerned. As the result of recommendations made by the Court a 44-hour working week has been proclaimed in respect of almost all the important industries under the jurisdiction of the State Industrial Arbitration Act. The principal exceptions are in the domestic group, *e.g.*, hotel, restaurant and hospital employees; gas-making; brick and pottery making; shipbuilding and repairing; tanning; sea transport services; and in the food manufacturing and distributing group, though it has been proclaimed in connection with brewing, flour-milling, pastry and biscuit making, and sugar refining. In regard to persons employed in connection with the State railways and tramways, the Court recommended that, in view of the financial position, the hours should not be reduced to 44 per week or 88 per fortnight, except for men engaged on construction work involving capital expenditure (as distinct from expenditure which is a direct charge upon revenue), and for tramway drivers, conductors, etc.

In the Commonwealth Court of Conciliation and Arbitration a claim for a maximum of 44 hours per week was granted in 1919 in respect of the clothing industry, in which the women workers greatly outnumber the men, on the ground that these are appropriate hours for women. In 1920 the Court heard a claim by the timber workers for a reduction from 48 hours per week to 44 hours. Seeing that any reduction of hours in this industry would affect other industries, the Court invited the Federal Government and the employers and employees' organisations to send representatives to take part in the hearing of the claim, and allowed certain large industrial undertakings to be represented. In November the Court announced its decision to adopt 44 hours per week as the standard for all industries within its jurisdiction. While this case was in progress the Commonwealth Conciliation and Arbitration Act was amended to provide that an award increasing the hours of work in any industry, or reducing them, unless they are over 48 per week, may be made only after the case has been heard by the President and at least two Deputy Presidents, and approved by a majority of the Court thus constituted. The amendment was not applied to cases already commenced, and, following the decision in the timber workers' case, the President, in June, 1921, awarded the 44-hour week to the Amalgamated Society of Engineers, except shiftworkers in continuous processes, for whom 48 hours was fixed. In November, 1921, the President and two Deputy Presidents heard claims for a reduction of hours submitted by several unions; the judgment was a reversal of the judgment in the timber workers' case, the Court deciding that in view of existing economic conditions it would not be justified in reducing the standard hours from 48 per week to 44.

#### PREFERENCE TO UNIONISTS.

In the majority of the State industrial awards a clause has been inserted granting preference to unionists, subject to the provisions of the Returned Soldiers and Sailors' Employment Act of 1919. In occasional cases preference has been made subject to restrictions providing that the existing employment of non-unionists should not be prejudiced, and that preference should not be extended to women. In a few cases the preference clause is in the nature of a prohibition of discrimination against unionists.

Preference may not be granted to members of a trade or industrial union who shall have taken part in, aided, or abetted an illegal strike after the passing of the Industrial Arbitration (Amendment) Act, 1918; and any declaration granting preference may be cancelled by the Court if the union, or any substantial number of its members, takes part in a strike. If any lesser number takes part in a strike, the Court may suspend the declaration.

In accordance with the Returned Soldiers and Sailors' Employment Act of 1919, preference in employment must be given, notwithstanding any industrial award or agreement, to members of the military and naval forces who have returned from active service abroad.

The Commonwealth Court is authorised to grant preference to members of registered organisations, but it is the usual practice to refuse to order preference in cases of respondents who undertake not to discriminate. No award, order, or agreement under the Commonwealth arbitration system may operate to prevent the employment of returned soldiers or sailors.

#### APPRENTICESHIP.

Under the Apprentices Act, 1901, any person resident and trading in New South Wales may take apprentices under certain conditions regulating the apprenticeship, *e.g.*, as to age limitation and probation before completion of indentures. The Act limits the working time of apprentices to 48 hours per week, with saving clauses as to rural industries and domestic service. An amendment of the Apprentices Act was made in 1915 to protect the interests of apprentices enlisting for active naval or military service.

Information is not available as to the total number of persons now serving in this State under indentures of apprenticeship (which are three-party contracts binding the employer, the employee, and his guardian), nor as to the extent of instruction imparted, and premiums usually paid.

The minimum age of apprentices is 14 years, and limitations have been placed by many industrial awards upon the proportion of apprentices to adults.

The Board of Trade is empowered to determine in which occupations and industries apprenticeship shall be a condition of employment; to fix the hours, wages, and proportionate number of apprentices, and the conditions of apprenticeship; and to facilitate technical education. It is required also to maintain an apprenticeship register, and to protect the interests of apprentices and trade-learners.

In 1918 the Board appointed a committee of its members to consider the question of apprenticeship, and to report as to the principles to be adopted in organising the system. The report was completed in 1920, and was published as a basis for the consideration of the question of apprenticeship at a public inquiry held by the Board.

Following the inquiry the Board, in April, 1922, announced its determinations and issued a draft of proposed regulations for the information of persons engaged in the industries to which they are to be applied; after hearing criticism of the proposals the Board will advise the Government to issue the necessary regulations.

#### INDUSTRIAL INSPECTION.

Inspection with the object of securing compliance with the industrial laws is a function of the Department of Labour and Industry; the inspectors conduct this work under the authority of the Acts administered by the Department, including the Industrial Arbitration Acts, the Factories and Shops Act, the Early Closing Acts, the Shearers' Accommodation Act, and the Scaffolding and Lifts Acts.

The inspection of factories and workshops is conducted under the provisions of the Factories and Shops Act, 1912, which consolidates previous enactments; it provides for the sanitation of factories, etc., the safeguarding of machinery and protection from fire. Restrictions are placed upon the employment of women and of juveniles, especially in regard to overtime and

in dangerous occupations. Occupiers of factories are required to keep and to supply to the inspectors full records regarding out-workers employed, and in terms of certain industrial awards the employment of out-workers is allowed only by special permission.

Under the Shearers' Accommodation Act, 1901, station owners are required to provide proper accommodation for shearers; the Act applies only to shearing sheds where at least six shearers are employed.

#### INDUSTRIAL ACCIDENTS.

In regard to the factories, accidents, fatal or otherwise, are reported to the factory inspectors, upon whom rests the responsibility of seeing that all dangerous portions of machinery are properly and securely fenced and guarded. Special regulations have been made regarding precautions against the risk of accident in connection with the use of steam boilers and other pressure vessels.

The following table shows the accidents reported in factories during the three years, 1918 to 1920, and the accident rate per 10,000 employees:—

Accidents.	Number.			Rate per 10,000 Employees.		
	1918.	1919.	1920.	1918.	1919.	1920.
Fatal ... ..	11	14	10	1.04	1.13	1.00
Partial disablement ... ..	106	122	130	10.00	9.83	13.02
Temporary incapacitation ... ..	549	565	644	51.81	45.53	64.49
Total ... ..	666	701	784	62.85	56.49	78.51

On the figures shown above, temporary incapacitation is the result of over 80 per cent. of the accidents; records are not available to show the time lost through these mishaps. The remaining accidents resulted in death or disablement.

The Scaffolding and Lifts Act, 1912, which is administered by the Department of Labour and Industry, regulates the construction and use of scaffolding, lifts, cranes, hoists, and derricks. The Act operates in the Metropolitan Police District and in the Newcastle District. On 31st December, 1920, there were 2,492 lifts under supervision. Since 1909 persons operating passenger lifts have been required to obtain certificates of competency. Nine fatal and 46 non-fatal accidents were reported during 1920 in connection with lifts, scaffolding, and cranes.

Particulars of accidents in mines are shown in the chapter "Mining Industry," and of railway and tramway accidents in the chapter "Railways and Tramways."

#### INDUSTRIAL DISEASES.

Reliable records relating to industrial diseases are not available; but certain occupations are, with good reason, regarded as unhealthy, and provision has been made under the Workmen's Compensation Acts in respect of certain occupational diseases. In the majority of unhealthy or noxious trades the hours are short and the wages are comparatively high. Regulations under the Factories and Shops Act have been framed with a view to minimising the risk of industrial diseases, and the use of white phosphorus in match factories has been prohibited by the White Phosphorus Matches Prohibition Act, 1915.

The Board of Trade conducts investigations into the incidence of industrial diseases. As the result of its activities a technical commission was appointed in 1919 to report upon the incidence of miners' phthisis and other occupational diseases, and legislation was enacted to provide for compensation in respect to cases of silicosis amongst stonemasons, quarrymen, etc., and cases of pneumoconiosis and tuberculosis amongst the miners of Broken Hill.

#### WORKMEN'S COMPENSATION.

##### *State Legislation.*

The State law relating to workmen's compensation is contained in the Workmen's Compensation Acts, 1916 and 1920, the Workmen's Compensation (Silicosis) Act, 1920, and the Workmen's Compensation (Broken Hill) Act, 1920.

The Workmen's Compensation Acts, 1916 and 1920, relate to all employees whose remuneration does not exceed £525 per annum, the wage limit having been increased from £312 to £525 per annum in 1920; the exceptions are casual hands employed otherwise than for the purpose of the employer's trade or business, members of the police force, outworkers, and members of the employer's family dwelling in his house.

The Acts apply in respect of certain industrial diseases, as specified in a schedule, and in respect of accidents which cause disablement for at least one week. Seamen employed on ships whose first port of clearance and whose destination are in New South Wales may claim compensation under these Acts, if they agree not to proceed also under the Seamen's Compensation Act of the Commonwealth.

The amount of compensation in cases where death results from the injury is as follows:—

If workman leaves persons wholly dependent upon his earnings, a sum equal to three years' earnings, or £300, whichever is the larger sum, but not exceeding £500.

If workman leaves persons in part dependent, a sum agreed upon or fixed by arbitration.

If he leaves no dependents, expenses of medical attendance and burial up to £20.

Where total or partial incapacity for work results from the injury, a workman is entitled to a weekly payment during the incapacity not exceeding two-thirds of his average weekly earnings; such weekly payment may not exceed £3, and the total liability in respect thereof may not exceed £750.

If a workman under 21 years of age is totally incapacitated he may be paid 100 per cent. of his average weekly earnings, but the weekly payment may not exceed 15s.

Provision is made whereby an employer may contract with his workmen that a scheme of compensation approved by the Registrar of Friendly Societies may be substituted for the provisions of the Acts.

The Workmen's Compensation (Silicosis) Act, 1920, empowers the Government to establish a scheme for the payment of compensation with respect to workmen who suffer death or disablement owing to fibroid phthisis or silicosis of the lung, or other diseases of the pulmonary or respiratory organs caused by exposure to silica or other dust. A fund may be established for this purpose, and the employers may be required to contribute to it;

the scale of compensation in cases of death or disablement, due to silicosis unaccompanied by tuberculosis, is that prescribed by the Workmen's Compensation Act, 1916, and its amendments; in other cases the rates will be prescribed in the scheme.

The Workmen's Compensation (Broken Hill) Act, 1920, which will remain in force until September, 1928, provides for the payment of compensation to mine workers suffering from occupational diseases who were employed in any of the Broken Hill mines on 1st May, 1919.

The following statement shows particulars regarding compensation in respect of accidents paid under the Workmen's Compensation Acts during the five years, 1916 to 1920:—

Year.	Accidents.				Compensation.			
	Death.	Disablement Compensated by—		Total.	Death.	Disablement Compensated by—		Total.
		Lump Sum.	Weekly Payment.			Lump Sum.	Weekly Payment.	
1916	52	123	5,154	5,329	£ 12,431	£ 10,036	£ 29,635	£ 52,102
1917	46	98	4,689	4,833	16,065	7,172	32,462	55,699
1918	96	147	11,529	11,772	32,353	18,383	78,191	128,928
1919	115	194	11,793	12,102	41,205	25,381	91,646	158,233
1920	104	157	12,976	13,237	38,407	26,105	107,084	171,596

Compensation was paid in respect of ninety-six cases of industrial diseases during 1920, the amount being £14,896; during the previous year the number of cases was forty-one, and the amount £3,188. Of the cases compensated during 1920, there were eighty-two cases of lead poisoning, viz., sixty-three metalliferous miners, eight painters in the building industry, and eleven persons in other industries; there were twelve cases of nystagmus amongst coal miners, and two cases of anthrax. The fatal cases numbered fourteen, all being due to lead poisoning.

In addition to the general enactments of the State, specific enactments of the Commonwealth provide for compensation to men in a particular class of work, such as that of seamen, which is subject to special risks, and to workers in the service of the Commonwealth Government.

### WAGES.

The minimum rates of wages for nearly all classes of adult and juvenile workers are fixed by industrial tribunals exercising statutory authority.

Juvenile labour is protected also to some extent by a law passed in 1908, providing that a minimum wage of not less than 4s. per week must be paid to factory workers, shop assistants, and others. The Act was designed to prevent the threatened development in unorganised trades of a system under which young workers were being employed without remuneration.

#### *The Living Wage.*

In fixing the rates of wages the industrial tribunals distinguish between the basic or living wage for unskilled labour and the secondary wage, which is remuneration for skill or other special qualifications. The principle has been adopted that the lowest wage must be sufficient to secure to the worker a reasonable standard of living. For this reason the question of the cost of living is of primary importance to the wage-regulating tribunals, and investigations have been conducted from time to time in order to fix a standard living wage to be used as a basis for their determinations.

The main object of the introduction of industrial arbitration was not the determination of rates of wages, but the settlement and prevention of industrial disputes; and the early legislation, while empowering the tribunals to fix wages as incidental to the preservation of industrial peace, gave no directions as to the principles to be observed in the exercise of the function. The determination of rates of wages, however, has become the most important task of the tribunals.

In October, 1907, Mr. Justice Higgins, newly appointed President of the Commonwealth Court, delivered his well-known "Harvester judgment"; in this case he not only laid down as a definite principle that the lowest wage should be based on the cost of living, but he determined also the standard of living which it should cover, and fixed a standard wage.

The Harvester case was not, strictly speaking, an industrial arbitration matter, but arose from a provision of the Excise Tariff Act of 1906, that certain goods should be exempted from excise duty, if manufactured in Australia under conditions as to the remuneration of labour declared by the President of the Court of Arbitration, to be "fair and reasonable." The manufacturer of "Harvester" machines at Sunshine, Victoria, applied to the Court for such a declaration, and the President, seeking to define the standard implied by the words "fair and reasonable," stated—"I cannot think of any other standard appropriate than the normal needs of the average employee regarded as a human being living in a civilised community."

In 1908 the State system of arbitration was changed by the establishment of wages boards, subject to the oversight of the Industrial Court. At this period prices were rising, and the increased cost of living was the ground of numerous claims for increases in wages. In order to bring about a reasonable degree of uniformity in the decision of the various boards, and to eliminate the waste of time resulting from a number of boards hearing evidence on the same subject, the Court decided to fix a standard wage for their guidance. With this object an inquiry into the cost of living was conducted by Judge Heydon, and a standard wage was fixed in February, 1914; subsequently the Court increased the rate from time to time to meet increases in the cost of living.

In 1918, under the Industrial Arbitration Amendment Act, the workers were accorded the statutory right to a standard wage, based on the cost of living; and the Board of Trade, established under its provisions, is charged with the duty of determining on this basis the living wages for men and for women, the declared rates being the lowest which may be fixed by any industrial award or agreement.

Having recognised the right of the worker to a living wage, the standard of living which that rate should cover becomes a matter for decision. In the Harvester case the standard was based apparently on the needs of a man, his wife, and a family of three children. In reference to this matter, the President of the Court has stated—"I had no evidence on the subject of the actual average; and, as it would be absurd to make the minimum wage depend on the number of persons in each employee's family, as it would also handicap the man with many children in seeking employment, I thought that a family of 'about five' might fairly be taken as the kind of family to be brought into the calculations."

After reviewing the rates paid to labourers by certain public undertakings, the President decided that 7s. a day was the lowest wage which would be regarded as "fair and reasonable" for unskilled labourers.

For some years the "Harvester wage" was used as a basis by the State tribunals, but in November, 1911, the Industrial Court of New South Wales decided that on account of the increased cost of necessities the basic wage should be increased to 45s. per week, and later in 1913 decided to conduct an inquiry in order to fix the living wage for the guidance of the wages boards.

At that inquiry, conducted by Mr. Justice Heydon of the Court of Industrial Arbitration, the standard differed from that of the Harvester case in regard to the size of the average family, and the number of dependent children was taken as two. The living wage was defined as the standard wage which will do neither more nor less than enable a worker of the class to which the lowest wage would be awarded to maintain himself, his wife, and two children in a house of three rooms and a kitchen, with food, plain and inexpensive, but quite sufficient in quantity and quality to maintain health and efficiency, and with an allowance for miscellaneous expenses.

In regard to the last-mentioned group, the Harvester standard was accepted, the items enumerated by Mr. Justice Higgins in that case being as follows:—Fuel, clothes, boots, furniture, utensils, rates, life insurance, savings, accident or benefit societies, loss of employment, union contributions, books and newspapers, train and tram fares, sewing machine, mangle, school requisites, amusements, and holiday, intoxicating liquors, tobacco, sickness and death, domestic help, unusual contingencies, religion or charity.

The evidence placed before the Court included statistical information supplied by the Government Statistician, budgets collected by employers and employees, municipal records, and returns supplied by house and estate agents.

As a result of the inquiry the Court, in February, 1914, assessed the sum of 48s. per week as the standard living wage for adult males in Sydney, but suggested that, in view of the prosperous condition of the industries, the boards should award more than the living wage, viz., 8s. 6d. per day for unskilled labour, 8s. 9d. for ordinary work, and 9s. for heavy work. In regard to existing awards the Court directed that application might be made to the boards to increase to 48s. per week all wages under that amount.

In December, 1915, the Court raised the minimum wage to 52s. 6d. per week (8s. 9d. per day or 1s. 1½d. per hour), the decision being applicable only to future awards. In August, 1916, the Court fixed the basic wage for future awards at 55s. 6d. per week (9s. 3d. per day, or 1s. 1½d. per hour), and directed that any wages in existing awards below 1s. 1d. per hour should be raised to 54s. per week (9s. a day, or 1s. 2d. an hour).

At the first inquiry by the Board of Trade in 1918 in connection with the determination of the living wage for men in the Metropolitan area, the Board decided to adopt as a starting point the standard wage as declared by the Court of Industrial Arbitration in February, 1914, and to ascertain the increase or decrease in the average cost of living since that time. By increasing this amount to compensate for the decrease in the purchasing power of money calculated on the cost of food and groceries and rent, it was found that the living wage proper was £2 18s. 6d. per week in September, 1918; but in view of the abnormal conditions of the time the Board added another 3d. per day, and declared the standard wage to be £3 per week.

At its second annual inquiry as to the living wage for men in Sydney, held in 1919, the Board rejected this method of calculating the increase in the cost of living, and decided to examine separately each element of the

living wage, namely, food and groceries, rent, fuel and light, clothing and boots, miscellaneous items. Its determination was announced in October, 1919, and the living wage fixed at £3 17s. per week, or 12s. 10d. per day, or 1s. 7½d. per hour.

In October, 1920, the Board of Trade declared the living wage to be £4 5s. per week, which represents an increase of 8s., or 11·4 per cent.

Inquiries into the cost of living in country districts were commenced in 1919, the same principles being pursued and the same methods adopted, as far as possible, as in assessing the living wage for the Metropolitan area in October, 1919. The living wage for the district of Newcastle was declared on 19th April, 1920, as £3 16s. 6d. per week, 12s. 9d. per day, and 1s. 7½d. per hour; for the South Coast area on 11th May, 1920, at £3 17s. 6d. per week, 12s. 11d. per day, and 1s. 7¾d. per hour; and for the Central Tableland area on 8th July, 1920, at £3 18s. per week, 13s. per day, and 1s. 7½d. per hour.

Subsequently it was decided to discontinue the practice of making separate declarations for defined areas and the living wage, £4 5s., declared in October, 1920, was applied to adult male employees in the whole State excepting the county of Yancowinna, which contains Broken Hill; and after special inquiry it was applied to that county on 9th March, 1921.

In October, 1921, the Board reduced the living wage for adult males to £4 2s. per week; 13s. 8d. per day, or 1s. 8½d. per hour. The declaration embraced the whole State, except the county of Yancowinna, which was exempted on account of the unfavourable condition of metalliferous mining, the principal industry of the Broken Hill district. The Board, following its previous declaration, arrived at its decision "mainly on the application of the ascertainable change in the cost of living." In assessing the change in the cost of living the Board used as a basis the prices during the three months, June to August, thus departing from the practice followed previously of using the prices during the preceding calendar half-year, January to June. This was the "Board's first experience on a falling market, with a probability of further falls during the year of the wage's operation," and the Board indicated its intention to review its decision in January following. Some doubt existed as to the Board's power of revision until a declaration had been in existence for one year, but in January, 1922, the Board decided that it had power under the Industrial Arbitration Act to rescind or vary any existing declaration at any time. The Board resolved, however, that it would not reconsider any application to vary the living wage, £4 2s., until April, 1922.

On 12th May, 1922, the Board varied the existing declaration, and reduced the living wage for men to £3 18s. per week, 13s. per day or 1s. 7½d. per hour. The rate applied to the State, except the Broken Hill district, but the same rate was applied to that area on 26th May, after an inquiry at Broken Hill into the cost of living in the county of Yancowinna.

When applications were made to the Court of Industrial Arbitration for reductions in wages in accordance with this declaration the unions of employees claimed that the Board had not the authority to review its declaration until it has been in force for one year. The question was referred to the Full Court of Industrial Arbitration and the validity of the declaration was upheld.

The following statement shows the living wage for men, as fixed by the Court of Industrial Arbitration, or as declared by the Board of Trade, since



1914; in 1919 and earlier years the declarations related to the Metropolitan area only. The declarations do not apply to rural workers, for whom a separate declaration must be made.

Date.	Living Wage for Adult Males.	Increase since 1914.	
		Amount.	Per cent.
	£ s. d.	£ s. d.	
1914—February ...	2 8 0	...	...
1915—December ...	2 12 6	4 6	9·4
1916—August ...	2 15 6	7 6	11·6
1918—September ...	3 0 0	12 0	25·0
1919—October ...	3 17 0	1 9 0	60·4
1920—October ...	4 5 0	1 17 0	77·1
1921—October ...	4 2 0	1 14 0	70·8
1922—May ...	3 18 0	1 10 0	62·5

In December, 1920, regulations were issued under the Industrial Arbitration Act prescribing that the living wage, £4 5s. per week, as declared by the Board of Trade in October of that year, must be paid to all adult male employees, except in cases where they are provided by their employers with board or lodging or any customary privileges or payments in kind of which the value had not been assessed by the Court of Industrial Arbitration.

The validity of applying the regulations to occupations not subject to awards was tested in the Supreme Court of New South Wales in the following year, and the Court decided that they were *ultra vires* insofar as they purported to penalise either employer or employee outside any award or agreement for paying or for accepting wages below those declared by the Board. On appeal to the High Court of Australia the decision of the Supreme Court was reversed and the validity of the regulations was upheld. The regulations, however, have become inoperative, as the declaration made by the Board of Trade in October, 1921, was not gazetted, though the reduction of 3s. per week was made in respect of award rates upon application to the Court of Industrial Arbitration. The declaration of the Board of Trade in May, 1922, was gazetted, but regulations were not issued in respect of the declaration.

#### *Living Wage for Rural Workers.*

The Industrial Arbitration Amendment Act of 1918 provided that the Board of Trade in declaring living wages should make a separate public inquiry into the cost of living of employees engaged in rural occupations, and should make a separate declaration as to the living wages to be paid to such employees, and should declare what deductions might be made from such wages for board or residence, or board and residence, and for any customary privileges or payments in kind. A further amendment enacted in the following year relieved the Board of a definite obligation to declare the wage for rural employees if, after consideration of the conditions of the rural industries, it should think fit to refrain from making the declaration. In 1919 and 1920 no declaration was made owing to the fact that the rural industries were suffering from the effects of drought. In October, 1921, the Board made its first declaration of the rural living wage to be paid to adult males in the State, excepting the County of Yancowinna, viz., £3 6s. per week, or 11s. per day. The following deductions may be made:—For residence comprising a separate house of three rooms or more, 12s., or less than three rooms, 5s.; for board and residence £1 4s.; and for board without

residence 19s. per week. The Board's determination was brought into operation by regulations, and it is provided that permits to work for lower rates may be granted to slow workers by the Industrial Registrar or Clerks of Petty Sessions.

*Living Wage—Commonwealth Court.*

The Commonwealth Court assesses a basic rate for each case in which minimum wages are to be determined. The Court may change its method of calculation in order to adjust its awards to existing conditions. The standard adopted is the Harvester wage, 7s. per day, in Melbourne in 1907. Until 1913 the wages were fixed after consideration of the cost of living at the time of the award, on the basis of the evidence given in the Harvester case. In July, 1913, the President decided to assess the basic wage by applying to the Harvester rate the index number of the cost of food, groceries, and rent, as determined by the Commonwealth Statistician for the calendar year preceding the date when the award was made, even if it were made as late as in November of the following year. Subsequently, on account of the abnormal increases during the war, it became the general practice to apply the index numbers for the twelve months preceding the date of the award.

This method of adjustment involves the assumption that the prices of clothing and miscellaneous items vary in the same ratio as the items for which the index numbers are computed.

The Harvester wage relates to the cost of living of a man, his wife, and three children, *i.e.*, one more than the average adopted by the State Court, and until 1919 the basic rate allowed by the Commonwealth Court for Sydney was usually about 6s. per week higher than the living wage fixed by the State tribunal. But the living wage rates as declared by the Board of Trade in 1919 and 1920 were much higher than the basic rates calculated at those dates in accordance with the method used in the Federal Court.

The Judges of the Commonwealth Court frequently having expressed their dissatisfaction with the method of assessing the basic wage, a Royal Commission (with Mr. A. B. Piddington, K.C., as Chairman) was appointed in December, 1919, to inquire into the following matters:—(1) The actual cost of living according to reasonable standards of comfort, including all matters comprised in the ordinary expenditure of a household, for a man with a wife and three children under 14 years of age, and the several items and amounts which make up that cost; (2) the actual corresponding cost of living during each of the last five years; (3) how the basic wage may be automatically adjusted to the rise and fall from time to time of the purchasing power of the sovereign.

The findings of the Commission in regard to question (1) referred to it, *viz.*, as to the actual cost of living for a man, his wife, and three children in each capital city in 1920 and in 1914 are shown below:—

Metropolitan Area.	Amount per Week.	
	1914.	1920.
	£ s. d.	£ s. d.
Sydney .. ...	3 12 11	5 17 1
Melbourne ... ..	3 7 9	5 16 6
Brisbane .. ...	3 4 0	5 6 2
Adelaide ... ..	3 11 2	5 16 1
Perth ... ..	3 12 9	5 13 11
Hobart ... ..	3 6 9	5 16 11

Upon the publication of the report of the Commission applications were made by various Unions to the Commonwealth Court and to various State tribunals to adopt its findings as a basis for the determination of minimum wages. The tribunals refused to grant the claims mainly on the ground that the rates assessed by the Commission did not represent "a reasonable and practicable basic wage for the unskilled worker," as the Commission did not consider the basic wage earner only, nor the effect of the recommendations on industries generally, nor the interests of employers and of the community.

#### *Alternative Method of Assessing Basic Wage.*

When the Board of Trade, in 1919, increased the living wage by 17s. per week, the Government, in view of the various issues affected, formulated a proposal to alter the method of applying the living wage principle to the determination of wages. It was proposed that the Board of Trade should declare as the living wage for men the amount sufficient to maintain a man and his wife, and should make a separate declaration as to the additional cost of maintaining a single child, and each additional child in the same household, and that the children of employees should be maintained by means of a fund derived from the contributions of the employers.

The proposals were embodied in a "Maintenance of Children" Bill, but after passing through the Legislative Assembly the measure was amended in the Upper House in respect of one of its vital principles, and its further consideration was postponed indefinitely.

In 1920, when the Basic Wage Commission reported its findings, a similar proposal was made to the Commonwealth Government by the Chairman of the Commission, in a memorandum prepared at the request of the Prime Minister. He indicated that while the standard wage is based on the cost of living of a man, his wife, and three dependent children, families with more than three children suffer privation, and families with less than three children and unmarried men receive more than necessary for the living wage; also that, as the actual average number of dependent children is less than three, the industries are required to pay for a large number of non-existent children. He estimated that a wage of £5 16s. would be distributed as follows:—(1) Man and wife, £4 per week; (2) three dependent children £1 16s., or an average of 12s. each. Assuming that the basic wage in the Commonwealth at the time was £4 per week—though probably it was about 2s. less—he stated that the increased burden on industry from raising the basic wage to £5 16s. per week was estimated at £93,000,000, but he suggested an alternative scheme which would cost £64,920,000 less than that amount, viz., that unmarried men and married men without children should receive a basic wage of £4 per week, and that the Commonwealth Government should pay an endowment of 12s. a week in respect of all dependent children, the cost of endowment to be covered by a tax on employers for each person employed by them—estimated at 10s. 9d. per week per employee.

No Government action has been taken to bring into operation the recommendations of the Commission, though in regard to employees in the service of the Commonwealth the Federal Government raised the minimum wage for married men and for single men with dependents to £4 a week, and granted to married officers an allowance of 5s. a week for each dependent child.

#### *Living Wage in the other States.*

It is interesting to compare the living wage for Sydney with that in the Metropolitan areas of the other Australian States. In Queensland the Industrial Arbitration Court has adopted a practice of fixing a minimum

wage for industries of average prosperity, and of determining a basic wage with regard to the particular circumstances of any industry of greater or less than average prosperity. In South Australia the standard living wage is fixed by the Board of Industry. In Victoria and Tasmania the rates of wages in the various industries are fixed by wages boards by a process of collective bargaining between the employers and the employees in the industry concerned, and the wages for unskilled labour vary accordingly. Under the industrial legislation of Western Australia and of the Commonwealth the court adjudicates in cases of disputes only, and a rate is assessed for each case.

The rates shown in the following statement for Melbourne and Perth are those awarded for unskilled labour in cases determined at or about the respective dates specified in the table; the quotation for Hobart represents the average of the rates per week of 48 hours for unskilled workers under the Wages Board determinations which were in force in 1914 and in 1922. The rates as quoted for the Commonwealth represent the rate which, in accordance with the usual practice of the Court, would have been used in determining rates of wages, if the Court had made awards for the capital cities as at the dates specified in the table. The rates have been calculated by applying to the Harvester wage, 7s. per day in Melbourne in 1907, the index numbers of the cost of food, groceries and rent in the capital cities during the year 1913 and during the twelve months ended September, 1921, and March, 1922, respectively.

Metropolitan Area.	Living Wage—Adult Males.			
	1914 (July).	1921-22.		
		Rate.	Date of Determination.	
	£ s. d.	£ s. d.		
Sydney ... ..	2 8 0	{ 4 2 0 3 18 0	October, 1921. May, 1922.	
Melbourne ... ..	2 5 0	3 19 6	May, 1922.	
Brisbane ... ..	2 2 0	4 0 0	February, 1922.	
Adelaide ... ..	2 8 0	3 17 6	April, 1922.	
Perth ... ..	2 14 0	3 17 0	May, 1922.	
Hobart... ..	2 8 0	3 15 0	May, 1922.	
Commonwealth ... ..	2 13 6	{ 4 4 6 3 18 0	October, 1921. April, 1922.	

#### *Living Wage for Women.*

The principle of a living wage was not applied to women's wages under the State industrial arbitration system until the Board of Trade conducted its first inquiry into the cost of living in 1918.

The standard adopted was the minimum wage which would cover the cost of living of the adult female worker of the poorest class, but having no other responsibility and living away from home in lodgings. Accordingly the living wage for women workers in the Metropolitan area was fixed in December, 1918, at 30s. a week, or 5s. a day, or 7½d. an hour; in 1919 the rate was increased to 39s. a week, 6s. 6d. a day, or 9½d. per hour.

On 23rd December, 1920, the rate of 43s. per week, 7s. 2d. per day, or 10½d. per hour, was declared as the living wage for women in the whole State except in the county of Yancowinna, and on 9th March the same rate was applied to women workers in that county. On 23rd December, 1921, the rate was reduced to 41s. per week.

Following upon the determination of the living wage in December, 1918, regulations were issued under the Industrial Arbitration Act which prescribed that the living wage as assessed by the Board of Trade in each year must be paid to all adult female employees in the Metropolitan district, except in cases where they were provided by their employers with board or lodging or any customary privileges or payments in kind, the amount of which had not been assessed by the Court of Industrial Arbitration. The object of the regulations was to entitle all women workers, with the exceptions noted above, to have their wages raised to the living wage, even if engaged in occupations which were not subject to awards, and without application to the Court. A decision of the High Court of Australia as to the validity of the regulations has been noted above. When the living wage, 41s. per week, was gazetted in December, 1921, the regulations were not revised and have thus become inoperative.

A living wage for women workers has not been fixed by the Commonwealth Court, except in particular industries. In September, 1914, employes in the felt hat factories of New South Wales, Victoria, and South Australia were awarded 30s a week—the full amount claimed; in May, 1917, a minimum Federal wage of 35s. per week was awarded for unskilled labour by women employed as ticket-sellers, cloakroom attendants, etc., in theatres and picture shows; in July, 1919, the basic rate for women in the clothing trades was fixed at 35s. per week for all States except Western Australia.

#### *Secondary Wage.*

Having ascertained the basic rates of wages for unskilled labour, the assessment of the secondary wage is a matter to be considered separately in connection with each occupation. It is the usual practice, under the State system, when varying wages on account of an increase or decrease in the cost of living, to preserve unaltered the recognised margin between the skilled and the unskilled workmen in an industry, and to vary all rates of wages by the amount by which the basic wage has been increased or reduced.

During the period of the war the State Court decided to depart from this practice, and new rules for the guidance of the industrial boards were contained in the "margin judgment" delivered in November, 1916. The following extracts from statements by the Judge of the Court indicate the procedure adopted:—

"We have resolved that where an industry appears to be benefiting by or during the war, the abnormal conditions created by the war shall be taken not to affect it, and the general rule to be observed as to its wage scale shall be that the current living wage shall be the basic wage for male adults, and, unless good reason appears to the contrary, all their wages appearing in the former award shall be increased by the same amount as has been added to the living wage. Thus: If upon hearing any claims it shall appear that the living wage has been increased by 3s. a week, all adult male wages in that industry will ordinarily be also increased by 3s. a week. Where, however, an industry has not benefited by or during the war, it must be taken to come under war conditions, and the scale must be subject to diminishing rates of increase."

"The Board in these cases should diminish the increases throughout the scale in rates above the living wage, or fix the amount of wage at which the increases should vanish, and then arrange in their scale of wages, according to their discretion, increases diminishing in amount, so as to vanish at the ascertained point."

These rules were general rules, and were not intended to restrict the right of the Court or the Boards to consider any special circumstances which appeared to affect particular wages, either upwards or downwards.

The "margin judgment" was abrogated by a judgment of the Full Bench of the Court of Industrial Arbitration in November, 1918, and the former rule was restored.

Subsequently, when making renewal awards to replace those which expired, the Court usually added to the rates in the original award the total amount by which the living wage had increased since the date of that award, and thus restored to the secondary wages any reductions which had resulted during the war period from the operation of the "margin" judgment.

The amendment of the Industrial Arbitration Act passed in December, 1919, provides that when a living wage declaration is made by the Board of Trade, application may be made to the Court for the variation of current awards as to wages; previously the Court varied only those rates below the living wage by raising them to that amount and other rates remained unaltered, unless a proviso had been inserted in the award to entitle the employees to have the whole award re-opened. In the latter cases all the rates were raised by the same amount as the living wage.

During the war period the Commonwealth Court followed a general practice of increasing only the basic wage and leaving unchanged the secondary portion of the wage rates. It was recognised that this method was not strictly fair to the skilled workers, as it did not maintain the effective margins between the skilled and the unskilled when the cost of commodities was rising. After the war the Court, in the case of the Merchant Shipping Guild, in June, 1920, and of the Amalgamated Society of Engineers, in May, 1921, applied the index numbers relating to the purchasing power of money to the secondary as well as to the basic wage.

Subsequent judgments of the Court, *e.g.*, the Engine-drivers and Firemen's case in October, 1921, indicate that this method of assessing margins will not be adopted as a general practice, but the Court will determine in each case an amount which it considers to be the fair value, as at the date of the award, of the skill required. To assess margins by ascertaining the amounts allowed in 1907 and increasing them at the same rate as the basic wage, would be unfair to all workers who had not been allowed margins in 1907, but received them subsequently, and to those whose margins had been increased since that year. Also it would preclude consideration of such factors as shorter hours or improvements in machinery and appliances which lighten labour and enable less skilled workers to do work formerly done by highly-skilled artisans only.

#### RATES OF WAGES.

The following tables show the rates of wages in various occupations at intervals since 1901. Except where otherwise specified, the figures indicate the minimum amount payable for a full week's work of 48 hours, on the basis of the weekly, daily, or hourly rates specified in the industrial awards or agreements. When labour is plentiful the award rates become general, but with a scarcity of labour competent employees command higher remuneration. The tables relate to a limited number of occupations only, but the award rates are published in greater detail in the "Statistical Register of New South Wales." In the 1920-21 issue a statement is published showing, in respect of a large number of occupations, the rates in each year from 1901 to 1913, inclusive, and in 1921; and it is intended to publish the particulars for the years subsequent to 1913 in the next issue.

*Building Trades.*

Employees in the building trades are paid according to hourly rates, and the following amounts have been calculated by multiplying the award rates by forty-eight, until the year 1921, when a 44-hour week was proclaimed. Stonemasons worked 44 hours per week throughout the whole period.

Occupation.	Weekly Rates of Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Bricklayers ...	60 0	62 0	69 0	72 0	108 0	108 0	80	50
Carpenters ...	60 0	60 0	63 0	66 0	108 0	110 0	83	67
Painters ...	54 0	55 0	60 0	64 0	104 0	104 0	93	62
Plasterers ...	51 0	54 0	57 0	66 0	106 0	106 0	108	61
Plumbers ...	60 0	60 0	66 0	66 0	110 0	110 0	83	67
Stonemasons (44 hours)	60 0	63 0	72 0	73 4	112 6	123 6	106	68
Other Labourers...	42 0	42 0	48 0	54 0	95 0	96 0	129	78
	to 48 0	to 48 0	to 56 0	to 62 0	to 99 0	to 100 0	108	61

Some of these rates of wages were more than doubled between 1901 and 1921, the lowest proportionate increase being bricklayers, 80 per cent. Since 1914 there have been increases ranging up to 36s. per week, or generally over 60 per cent. There was a scarcity of skilled labour in the building trades during 1920, and competent workmen were paid wages considerably in excess of the award rates.

*Engineering, Ironworks, etc.*

The weekly wages in the engineering and metal trades were as follow :—

Occupation.	Weekly Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921. *	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Boilermakers...	60 0	60 0	66 0	66 0	110 6	107 6	79	63
Electrical Fitters ...	60 0	60 0	66 0	74 0	111 6	108 6	83	47
„ Mechanics ...	48 0	60 0	60 0	66 0	103 6	100 6	109	52
Engineering—								
Blacksmiths ...	60 0	60 0	64 0	72 0	112 6	109 6	83	52
Brassfinishers ...	60 0	60 0	62 0	70 0	110 6	107 6	79	54
Coppersmiths ...	60 0	60 0	68 0	72 0	112 6	109 6	83	52
Fitters and Turners ...	60 0	60 0	64 0	70 0	110 6	107 6	79	54
Patternmakers ...	60 0	60 0	68 0	74 0	114 6	111 6	86	47
Ironmoulders ...	60 0	60 0	64 0	70 0	110 6	107 6	79	54
Tinsmiths ...	60 0	60 0	60 0	60 0	99 6	96 6	61	61
General Labourers ...	42 0	42 0	42 0	45 0	88 0	85 0	102	89

\* 44 hours.

In the engineering workshops the wages of the skilled workmen did not show much improvement during the ten years, 1901 to 1911, but increases ranging from 37s. 6d. to 40s. 6d. per week were awarded between 1914 and 1920. In the following year there was a general decrease of 3s. per week as a result of a reduction in the living wage.

*Bootmaking and Clothing Trades.*

The local manufacture of boots and of ready-made clothing increased considerably during the war period owing to the demand for military supplies and to the restriction of imports. Increases in the wages of employees are shown below :—

Occupation.	Weekly Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Bootmaking—Men ...	45 0	45 0	54 0	54 0	98 6	98 6	119	82
Women ...	18 0	20 0	22 6	23 0	44 0	44 0	144	57
Clothing—								
Tailors ...	50 0	50 0	55 0	60 0	92 0	102 6	105	71
Tailoresses—Coats ...	25 0	25 0	30 0	30 0	49 0	49 9	99	66
Trousers	20 0	20 0	22 6	25 0	45 0	46 9	134	87
Woollen-mill Hands—								
Men ...	35 0	35 0	42 0	48 0	85 6	82 6	136	72
Women	18 6	20 0	21 0	21 0	43 0	46 3	150	120

The wages of journeymen in the boot trade were raised by 9s. a week between 1901 and 1914, and after that year by 43s. 6d., or 82 per cent. The rates of the women employees were not fixed by award until 1911.

In the tailoring industry the majority of the employees work under an award of the Commonwealth Court, and the prescribed hours per week are 44. Many workers in the clothing trade are paid piece-work rates, which are fixed by award.

In the woollen mills the wages of the men employed as general hands were increased by 136 per cent., and the rate for women by 150 per cent.; the hours are 44 per week. Only a few hands were employed in this industry in 1901, but it has grown considerably during recent years.

*Food and Drink Factories.*

The wages in the principal industries in connection with the food supply were as follow :—

Occupation.	Weekly Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Bread—Bakers ...	52 6	52 6	56 0	60 0	102 6	100 6	91	68
Carters ...	42 0	45 0	48 0	52 6	97 0	94 0	124	79
Brewing—Towermen ...	44 0	44 0	48 0	57 0	92 6	92 6	110	62
Flour—Shift-millers ...	45 0	50 0	50 0	63 0	104 0	101 0	124	60
	to	to	to	to	to	to		
	55 0	60 0	65 0	70 0	112 0	109 0	98	56
Jam-factory Hands ...	36 0	36 0	45 0	48 0	85 0	85 0	136	77

The rates for operative bakers ranged from 52s. 6d. in 1914 to 102s. 6d. in 1920; a reduction of 2s. per week was made in 1921, when the rate was 68 per cent. above the pre-war level. The hours of bread-carters were reduced from 60 per week to 54 in 1913. A 44-hour week was proclaimed in respect of the breweries and flour mills during 1921, and the bakers in 1922.



*Other Factories and Shops.*

The wages in the furniture and printing trades and in other classes of factories are shown below :—

Occupation.	Weekly Rates of Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Coopers ... ..	60 0	60 0	64 0	66 0	110 0	110 0	83	67
Furniture and Cabinet- makers ... ..	52 0	52 0	56 0	60 0	104 0	101 9	96	70
Sawyers— Band or Jig ... ..	54 0	54 0	60 0	68 0	106 0	106 0	96	77
Other ... ..	40 0	42 0	45 0	54 0	94 0	94 0	135	74
	to 48 0	to 48 0	to 54 0	to 66 0	to 104 0	to 104 0	117	58
Bookbinders ... ..	52 0	52 0	56 0	65 0	102 0	102 0	96	57
Compositors, Jobbing ...	52 0	52 0	60 0	65 0	105 0	105 0	102	62
Tallowmaker ... ..	47 6	52 6	55 0	59 0	96 6	93 6	97	58
Tanning— Beamsmen ... ..	41 0	42 0	47 0	60 0	94 0	96 6	135	66
Curriers ... ..	45 0	45 0	50 0	65 0	99 0	101 6	126	56
Labourers ... ..	34 0	36 0	40 0	51 0	85 0	87 6	157	72
Brick Burners ... ..	48 0	48 0	54 0	61 6 and 63 0	98 4 and 101 0	98 4 and 101 0	105	60
							110	60
„ Pitmen ... ..	44 0	44 0	52 0	62 0	100 0	100 0	127	61
Quarrymen (44hrs.) ...	56 0	60 0	67 10	67 10	99 0	99 0	77	46
Leatherworkers ... ..	45 0	45 0	54 0	54 0	90 0	99 0	120	83
Coachbuilders, Road ...	48 0	48 0	56 0	60 0	96 0	96 0	100	60
Jewellers ... ..	50 0	50 0	55 0	65 0	101 0	98 0	96	51
	to 52 6	to 55 0	to 60 0	to 70 0	to 104 0	to 101 0	92	44
Watchmakers (46½hrs.)...	50 0	55 0	60 0	65 0	103 0	100 0	100	54
Shop-assistants, General	40 0	45 0	52 6	52 6	85 0	82 0	105	56
	to 50 0	to 50 0			to 99 6	to 96 6	93	84

The rates for sawyers shown above were fixed in 1920 by an unregistered agreement between the Timber Workers' Union and a number of employers. The 44-hour week for timber workers, awarded by the Commonwealth Court, came into operation as from 1st January, 1921. Other industries working 44 hours in 1921 were coopers, furniture trades, printing, etc., tanning, leather trades, coach builders, jewellers, and shop assistants.

*Coal-mining.*

The particulars in the following statement indicate the increases in the wages of employees in the coal-mining industry since 1901. The miners are paid piece-work rates, which vary according to the conditions of the seams or places where the coal is mined, and the table shows the range of the hewing rates per ton in the various mining districts, and not the weekly wages as in the case of other occupations :—

Occupation.	Weekly Rates of Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Miners (hewing rate per ton) ...	1 10 to 4 2	2 0 to 3 10	2 0½ to 4 2	2 3½ to 4 2	3 6½ to 6 11½	2 5½ to 6 11½	... ...	... ...
Wheeler ...	42 0	38 0	42 0	51 0	93 6 to 109 0	93 6 to 109 0	123	83
Engine-drivers—								
Loco. and Winding	60 0 to 66 0	54 0 to 60 0	66 0 to 72 0	66 0 to 78 0	114 0 to 126 0	120 0 to 132 0	100	82
Other...	48 0 to 60 0	43 6 to 54 0	54 0 to 66 0	60 0 to 75 0	105 6 to 120 0	105 6 to 120 0	120	76
Labourers ...	39 0	36 0	42 0	48 0 to 54 0	99 0 to 105 6	99 0 to 105 6	154	101
							171	96

The hewing rates per ton are not strictly comparable one year with another, as they may not relate to the same seams or mining places. Up to the end of 1916 the hewing rate depended upon the price of coal, and variations in the hewing rate were reflected in the rates for off-hand labour. The rates were lower in 1906 than in 1901, owing to reductions in the price of coal. Since that year they have risen steadily.

Increases amounting to 15 per cent. for miners and 20 per cent. for off-hand labour were awarded, as from 1st January, 1917, by a special tribunal appointed under the War Precautions Act, and the working hours were fixed as follow :—Eight hours bank to bank, including half-an-hour for meal time, on Monday to Friday, and six hours on Saturdays, Sundays, and holidays. The miners do not work on alternate (pay) Saturdays, and the number of shifts per fortnight is eleven. In May, 1919, the tonnage rates were further increased by 15 per cent., and 2s. 7d. per day was added to the wages for off-hand labour. In September, 1920, a coal-miners' tribunal, appointed under the Commonwealth Industrial Peace Act of 1920, increased the rates for all contract work by 17½ per cent., and for off-hand labour by 3s. per day.

Intermittency, due to slackness of trade, blocks in the transport system, and industrial disputes, is an outstanding feature of the coal-mining industry (as is shown on page 558); therefore, the actual earnings are generally lower than the weekly rates quoted above, which are calculated on the basis of a full week's work.

*State Railway Services.*

The wages of employees in the traffic branch of the Government Railways and of pick and shovel men engaged in railway construction are shown below :—

Occupation.	Weekly Rates of Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Traffic—								
Engine-drivers Loco. {	66 0	66 0	66 0	72 0	109 0	106 0	61	47
	to	to	to	to	to	to		
	90 0	90 0	90 0	96 0	133 0	130 0	44	35
Firemen Loco. .... {	48 0	48 0	48 0	57 0	91 0	88 0	83	54
	to	to	to	to	to	to		
	60 0	60 0	50 0	66 0	103 0	100 0	67	52
Guards ... .. {	51 0	51 0	51 0	54 0	91 0	88 0	73	63
	to	to	to	to	to	to		
	66 0	66 0	66 0	72 0	109 0	106 0	61	47
Porters ... .. {	36 0	36 0	39 0	48 0	85 0	82 0	128	71
	to	to	to	to	to	to		
	48 0	48 0	51 0	57 0	91 0	88 0	83	54
Signalmen ... .. {	45 0	45 0	45 0	66 0	94 0	91 0	102	38
	to	to	to	to	to	to		
	69 0	69 0	69 0	78 0	115 0	112 0	62	44
Construction—								
Pick and Shovel Men ..	42 0	42 0	48 0	56 0	94 6	94 6	115	69

There was little variation between 1901 and 1911; a rise of about 6s. per week occurred between 1911 and 1914, and of 34s. or 37s. during the war period. In 1921 there was a general reduction of 3s. per week. Some of the railway employees work 44 hours, but the majority of the traffic hands work 48 per week.

*Shipping.*

The wages of seamen, cooks, and stewards on vessels engaged in interstate trade are shown below, monthly rates being quoted; victualling and accommodation is provided in addition to wages :—

Occupation.	Monthly Rates of Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	per cent.	per cent.
A.B. Seamen ... ..	7 0	7 0	8 0	8 0	14 0	15 17	126	98
Boatswains ... ..	8 0	8 0	9 0	9 0	15 0	16 17	111	87
Firemen ... ..	9 0	9 0	10 0	10 0	16 0	17 17	96	79
Cooks ... .. {	5 0	5 0	6 10	7 10	10 10	14 0	180	87
	to	to	to	to	to	to		
	12 0	12 0	13 10	14 10	18 5	22 10	88	55
Stewards ... .. {	4 0	4 0	5 0	5 10	13 10	15 16	295	187
	to	to	to	to	to	to		
	6 0	6 0	7 0	7 10	15 10	17 16	197	137

These rates have been determined by Federal award or by agreement operating throughout the Commonwealth. The hours of seamen are 8 per day at sea, but leave of absence equivalent to 4 hours for each week employed is allowed when in port, thus the hours are, on the average, 52 per week. The cooks receive overtime pay for hours exceeding 10 in any one day, and the hours of stewards at sea are 10 per day within a spread of 15 hours, in intermediate ports 9 per day, and in terminal ports 8 per day. The wages of seamen and firemen were raised by £8 17s. per month during the period under review, the percentage increases ranging from 96 to 126. The rates for the cooks are classified according to the tonnage of the vessels on which they are employed; those quoted above apply to vessels of less than 4,000 tons gross register, and show increases ranging from £9 to £10 10s. per month. The increases in the rates for stewards are greater proportionately than the increases in other classes of labour in the shipping industry.

The rates for wharf-labourers in 1901 were 1s. per hour for interstate cargoes and 1s. 3d. for oversea cargoes; in 1906, interstate 1s. 1½d., oversea 1s. 3d.; the rate was 1s. 6d. per hour in 1911; 2s. 3d. in 1920; and 2s. 9d. in 1921. Extra rates are paid for special cargoes, such as wheat, explosives, or frozen meat.

#### *Rural Industries.*

The rates of wages in the rural industries are shown below; rations and lodgings are provided in addition to the amount stated, except in the case of shearers, to whom rations are not supplied.

Occupation.	Weekly Rates of Wages.						Increase.	
	1901.	1906.	1911.	1914.	1920.	1921.	1901 to 1921.	1914 to 1921.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	per cent.	per cent.
Shearers (per 100 sheep).	20 0	24 0	24 0	24 0	40 0	40 0	100	67
Station Hands...	20 0	25 0	25 0	25 0	42 0	48 0	140	92
Farm Hands {	15 0 to 20 0	15 0 to 20 0	20 0 to 25 0	20 0 to 25 0	30 0 to 40 0	} 42 0	{ 180 110	110 68
Harvesters ...	27 6	25 0	30 0	{ 30 0 to 40 0	40 0 to 60 0	42 0 to 60 0	53 118	40 50
Milkers ... {	15 0 to 20 0	15 0 to 20 0	20 0 to 25 0	20 0 to 25 0	} 36 6	42 0	{ 180 110	110 68

The majority of these rates have been doubled since 1901. The rates for pastoral workers are fixed by an award of the Commonwealth Court; the other classes of rural labour are not subject to industrial awards, but the Board of Trade's declaration in 1921 fixed a minimum wage of 42s. per week for those who are provided with board and lodging.

### *All Industries.*

The tables given on the preceding pages illustrate the changes in the rates of wages in regard to individual occupations, and, in order to show the extent to which variations affected wages in all industries or in the various groups of industries, the following table of average rates has been prepared.

In the 1919 and 1920 issues of the Year Book such particulars were published in respect of each year since 1914, the rates being those determined for New South Wales by the Commonwealth Statistician, whose figures were adopted for the sake of uniformity, as they were in close agreement with averages determined by the author. For the computations particulars were obtained in respect of 874 occupations; the industrial awards and agreements were the main sources of information, and for occupations not subject to the industrial determinations, the ruling or predominant rates were ascertained from employers and from secretaries of trade unions. The occupations were classified into fourteen industrial groups, and the tables were compiled on the basis of the weekly rates payable to adult male employees in the Metropolitan district, except in regard to the mining, shipping, and rural industries, which are conducted for the most part outside the Metropolitan area.

In determining the average wage in each group an arithmetic mean was taken; that is, the sum of the rates was divided by the number of occupations, no detailed system of weights being applied owing to the difficulty of obtaining satisfactory data as to the number of persons employed in each occupation. In computing the average for all the industries combined, the average for each industrial group was weighted in accordance with the relative number of all male workers engaged in that group.

In addition to rates of wages in groups and general averages for all industries in 1914 and later years, the Commonwealth Statistician has determined an average rate for all industries combined for New South Wales in 1901 and in the years from 1906 to 1913 inclusive, but details regarding each group prior to 1914 were not available. It was, therefore, necessary to undertake a special inquiry in order to obtain complete information for each year from 1901 to 1913. The task was attended with difficulty, especially in regard to the collection of data for the earlier years, when few industries were working under awards; but with the assistance of a number of employers, union secretaries, and officers directing the public utility services, the necessary data were obtained.

The results are contained in the following table which shows the average weekly rates of wages payable to adult males in each group of industries, and the weighted average for all groups combined in each year since 1901.

In the shipping, pastoral, and domestic industries, where food and lodging are supplied, the value of such has been added to the rates:—

Group of Industries.	Average Weekly Rates of Wages.											
	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
1. Wood, Furniture, Sawmill, Timber Works, etc. ....	48 4	48 4	48 4	48 5	49 7	49 7	49 7	51 0	54 0	54 2	55 9	
2. Engineering, Shipbuilding, Smelting, Metal Works, etc. ....	49 4	49 6	49 7	49 8	49 8	49 8	50 9	52 1	52 6	53 0	55 4	
3. Food, Drink, and Tobacco Manufacture and Distribution ....	44 11	44 11	45 3	45 3	45 3	45 3	46 2	48 7	50 2	51 2	51 4	
4. Clothing, Hats, Boots, Textiles, Rope, Cordage, etc. ....	44 5	44 5	44 5	44 5	44 5	44 5	45 3	45 7	47 6	47 6	51 7	
5. Books, Printing, Bookbinding, etc. ....	53 1	53 1	53 1	53 1	53 1	54 7	56 6	56 6	57 0	58 1	64 4	
6. Other Manufacturing ....	44 10	45 3	45 4	46 5	45 11	46 1	46 2	47 7	49 2	49 7	51 7	
7. Building ....	56 2	56 2	56 10	56 11	57 3	57 6	57 9	58 7	59 0	61 8	63 4	
8. Mining, Quarries, etc. ....	52 3	52 8	52 8	52 5	49 10	51 7	53 11	55 6	56 9	57 5	60 0	
9. Railway and Tramway Services ....	52 2	52 2	52 6	52 6	52 6	52 6	52 6	53 3	53 7	54 0	55 2	
10. Other Land Transport ....	41 8	41 8	41 8	41 8	41 8	41 8	43 4	44 0	44 4	44 4	44 4	
11. Shipping, Wharf Labour, etc. ....	38 4	37 6	37 6	37 6	38 8	38 8	39 6	40 3	43 9	43 10	44 6	
12. Pastoral, Agricultural, Rural, Horticultural, etc. ....	32 5	35 5	35 5	35 5	35 5	35 5	37 5	38 1	40 9	41 4	43 5	
13. Domestic, Hotels, etc. ....	37 11	38 7	38 2	37 6	37 6	39 1	39 6	41 10	42 9	44 3	44 3	
14. Miscellaneous ....	43 5	43 11	43 11	43 8	43 8	44 7	45 2	46 3	47 9	48 3	49 0	
All Industries ... ..	43 11	44 8	44 9	44 9	44 7	45 4	46 7	46 9	48 3	49 7	51 5	
	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
1. Wood, Furniture, Sawmill, Timber Works, etc. ....	55 6	57 3	58 0	58 1	61 9	65 1	67 6	69 6	76 6	101 1	101 0	
2. Engineering, Shipbuilding, Smelting, Metal Works, etc. ....	55 4	57 2	57 8	57 11	61 10	64 0	65 11	68 11	82 5	97 6	98 7	
3. Food, Drink, and Tobacco Manufacture and Distribution ....	51 4	55 8	56 0	56 0	59 7	62 3	64 1	66 1	79 3	94 0	95 2	
4. Clothing, Hats, Boots, Textiles, Rope, Cordage, etc. ....	51 7	51 11	54 0	54 4	55 3	60 2	61 6	63 3	76 11	91 6	91 10	
5. Books, Printing, Bookbinding, etc. ....	64 4	65 8	65 9	66 1	66 4	67 9	72 2	75 2	86 0	105 11	106 3	
6. Other Manufacturing ....	51 7	52 0	56 3	56 4	58 10	63 6	65 0	67 3	79 4	95 6	97 7	
7. Building ....	63 4	66 5	68 0	68 1	68 8	71 4	75 6	76 0	78 10	101 3	104 7	
8. Mining, Quarries, etc. ....	60 0	62 9	62 9	63 8	64 9	72 6	75 5	75 7	86 2	105 4	105 4	
9. Railway and Tramway Services ....	55 2	57 11	61 1	61 5	63 0	65 2	65 11	67 8	81 11	98 6	95 5	
10. Other Land Transport ....	44 4	47 8	51 4	51 10	53 5	59 4	59 7	62 1	78 3	93 0	92 0	
11. Shipping, Wharf Labour, etc. ....	44 6	48 2	48 9	49 9	52 5	58 4	60 1	63 5	76 1	89 10	100 5	
12. Pastoral, Agricultural, Rural, Horticultural, etc. ....	43 5	48 10	49 11	49 11	50 11	55 10	61 1	62 3	71 8	89 9	92 0	
13. Domestic, Hotels, etc. ....	44 3	45 5	45 5	46 5	50 0	53 3	56 9	57 2	71 5	88 10	89 0	
14. Miscellaneous ....	49 0	51 2	53 1	53 7	55 3	59 7	60 3	62 1	73 3	88 10	91 5	
All Industries ... ..	51 5	54 3	55 9	56 2	57 7	61 11	64 5	65 11	76 9	94 0	95 10	

From 1901 to 1918 the highest average rate was in the building industry, except in 1911, when the average was exceeded in the printing trades, and in 1916, when the mining average was higher; during the last two years it has occupied third place. The printing trades are now at the head of the averages, with mining second. These groups—building, printing, and mining—are strongly organised trades and include a large proportion of skilled artisans. The next in order were usually the railway and tramway services, engineering, and woodworking. In nearly all the years the lowest averages were in the shipping, rural, and domestic groups. But in 1921 the average in the shipping industry rose by 10s. 7d. per week, while all other averages

showed little or no increase, and some declined; the result was that the average in the shipping group was in fifth place. The rates for rural workers have improved relatively during recent years, but in the clothing and food industries the averages have not kept pace with the movement in other trades.

The average rate for all industries combined increased in each year between 1901 and 1921, except in 1904, when there was no change, and in 1905 when there was a slight decrease due to lower rates in the coal-mining industry where wages dropped with the price of coal. The average rate increased by 12s. 3d. in the thirteen years preceding the war, and by 39s. 8d. per week after 1914. The increase in each year was as follows:—

Year.	Average Rate per week.	Increase from Year to Year.		Comparison with Rate in 1914, 1901 to 1913 being below, and 1915 to 1921 above that rate.	
		Amount.	Per cent.	Amount.	Per cent.
1901	s. d. 43 11	s. d. ...	...	s. d. 12 3	21·8
1902	44 8	0 9	1·7	11 6	20·5
1903	44 9	0 1	0·2	11 5	20·3
1904	44 9	...	...	11 5	20·3
1905	44 7	*0 2	*0·4	11 7	20·6
1906	45 4	0 9	1·7	10 10	19·3
1907	46 7	1 3	2·8	9 7	17·1
1908	46 9	0 2	0·4	9 5	16·8
1909	48 3	1 6	3·2	7 11	14·1
1910	49 7	1 4	2·8	6 7	11·7
1911	51 5	1 10	3·7	4 9	8·5
1912	54 3	2 10	5·5	1 11	3·4
1913	55 9	1 6	2·8	0 5	0·7
1914	56 2	0 5	0·7	...	...
1915	57 7	1 5	2·5	1 5	2·5
1916	61 11	4 4	7·5	5 9	10·3
1917	64 5	2 6	4·0	8 3	14·7
1918	65 11	1 6	2·3	9 9	17·4
1919	76 9	10 10	16·4	20 7	36·6
1920	94 0	17 3	22·5	37 10	67·4
1921	95 10	1 10	2·0	39 8	70·6

\* Decrease.

The foregoing tables relate to the nominal rates of wages, that is the actual amounts of money payable in return for labour; but in order to show the effective value of these amounts it is necessary to consider them in relation to the purchasing power of money. Food and rent are the only elements of expenditure of which satisfactory records as to variations in the purchasing power of money are available, and in the following statement the relation between the cost of these items and the average rates of wages is illustrated. For this purpose the average rates of wages have been reduced to index numbers, and have been divided by the index numbers of food and rent; the results indicate the variations in the effective wage :—

Year.	Average Nominal Wage per Week.		Index Number of Food and Rent Combined.	Index Number of Effective Wage.
	Amount.	Index Number.		
	s. d.			
1901	43 11	854	848	1007
1902	44 8	869	921	944
1903	44 9	870	914	952
1904	44 9	870	854	1019
1905	44 7	867	900	963
1906	45 4	882	901	979
1907	46 7	906	892	1016
1908	46 9	909	951	956
1909	48 3	938	954	983
1910	49 7	964	953	1012
1911	51 5	1000	1000	1000
1912	54 3	1055	1116	945
1913	55 9	1084	1112	975
1914	56 2	1092	1155	945
1915	57 7	1120	1261	888
1916	61 11	1204	1328	907
1917	64 5	1253	1356	924
1918	65 11	1282	1375	932
1919	76 9	1493	1502	994
1920	94 0	1828	1752	1043
1921	95 10	1864	1654	1127

In the decennium 1901-10 the effective wage ranged between 1·9 per cent. above and 4·6 below the level of 1911. In 1912 the effective wage was reduced by 5·5 per cent.; in the following year the index number of food and rent dropped slightly, and the effective wage rose by 3·2 per cent.; it fell considerably during the years 1914 and 1915, and the index number was 11 per cent. lower than in 1911. Since 1915 the increase in wages has been greater than the increase in the cost of food and rent, and the effective wage index number has risen in each year, but it was not until 1920 that the nominal wage had the same purchasing power as in 1911; in 1921 it was 12·7 per cent. higher than in 1911.



## PRODUCTION OF LOCAL INDUSTRIES.

The value of production, as shown in this section, relates to the primary industries—Pastoral, Agricultural, Dairying and Farmyard, Mining, Forestry, Fisheries, and Wild Animals—and to the secondary or Manufacturing industries.

The values in regard to the primary industries—except mining—are stated as at the point or place of production, on the basis of the prices to the producers, which are therefore somewhat less than the wholesale prices in the Metropolitan market. No deduction has been made on account of the cost of items, such as seed, fertilisers, containers, fodder for animals, machinery, etc.

Some of the quotations are known to be understated, for instance, the values as estimated for agricultural and farmyard produce are deficient, because records are not available as to production (which in the aggregate must be large) on areas less than one acre in extent, the production from fisheries includes only the catches of licensed fishermen, and the return from forests for the years prior to 1906 is believed to be understated.

In regard to mineral production, it has been stated in the chapter "Mining Industry" that the records are incomplete; in the case of some products the value of exports only is recorded, and in other cases values are assessed at different stages of production, *e.g.*, the value quoted for the product of the silver-lead mines represents the net value as declared by the producers upon export, the bulk of the ores being sent out of the State for treatment.

The value of the manufacturing production is taken as the value at the factory of the manufactured goods less the cost of raw materials and fuel, but returns are not collected as to the production in small establishments employing less than four hands and not using machinery, nor from bake-houses or butchers' smallgoods factories.

The aggregate value of production as stated should not be assumed to be the total fund available as the wages fund of the State or as remuneration for the agents of production in the form of wages, rent for land, and interest on capital invested. The values quoted for the specified industries do not include the value added by reason of transportation to market and distribution to the consumer, nor, in the case of exports, carriage to the point of shipment. Moreover the earnings of many important activities, such as the building industry, of which records are not available, or from railway construction or commercial and other pursuits are not included.

It will thus be seen that the amounts quoted have several shortcomings, nevertheless they are valuable as indicating the increase or decrease in production from year to year, and as being the principal means available of measuring the growth of the national income.

The following statement shows the estimated value of production of the specified industries, at the place of production, at intervals since 1871. After 1913 the values are quoted for the years ended 30th June, except those relating to the mining industry, which relate to the calendar years ended six months later. The difference between the quotations for the manufacturing production in this table, and in the chapter "Manufacturing Industry," represents the value of production from factories dealing with milk products, which is included here in the returns of the dairying industry.

The values quoted in this table are not exact, especially in the earlier years, but may be considered to be the best estimates to be made from the data available.

Year.	Value of Production.								
	Primary Industries.							Manu- facturing Industries.	Total, All Industries.
	Rural Industries.				Forests, Fisheries, and Wild Animals.	Mining.	Total, Primary Indus- tries.		
	Pastoral.	Agri- cultural.	Dairying and Farmyard.	Total, Rural Industries.					
	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000
1871	7,609	2,220	1,110	10,939	324	1,626	12,889	2,490	15,379
1881	10,866	4,216	2,285	17,367	492	2,138	19,997	5,183	25,180
1891	14,725	3,615	2,735	21,075	758	6,434	28,267	7,799	36,066
1896	11,774	5,374	2,546	19,694	715	4,465	24,874	7,302	32,176
1901	12,447	7,060	3,188	22,695	986	5,681	29,362	9,742	39,104
1902	10,636	4,139	3,601	18,376	1,113	5,102	24,591	10,000	34,591
1903	12,682	8,359	3,676	24,717	1,112	5,958	31,787	9,601	41,388
1904	13,226	5,414	3,468	22,108	1,200	6,243	29,551	9,899	39,450
1905	16,942	6,543	4,255	27,740	1,521	6,897	36,158	10,631	46,789
1906	19,711	7,518	4,506	31,735	1,969	7,913	41,617	11,906	53,523
1907	22,281	6,588	4,586	33,455	1,964	10,295	45,714	13,481	59,195
1908	18,846	8,319	5,301	32,466	1,872	8,384	42,722	13,633	56,355
1909	19,040	10,908	5,321	35,269	2,142	7,403	44,814	14,536	59,350
1910	21,028	9,493	6,007	36,528	2,516	8,455	47,499	16,794	64,293
1911	19,434	9,749	6,534	35,717	2,213	9,410	47,340	19,143	66,483
1912	19,440	11,817	7,192	38,449	2,347	11,229	52,025	22,464	74,489
1913	20,738	12,378	7,063	40,179	2,644	11,651	54,474	23,482	77,956
1914-15	18,848	10,031	7,846	36,725	2,074	9,603	48,402	24,011	72,413
1915-16	21,576	20,362	7,649	49,587	2,603	10,516	62,706	24,927	87,633
1916-17	26,842	13,012	9,419	49,273	3,055	12,564	64,892	26,748	91,640
1917-18	28,435	13,685	10,635	52,755	3,737	13,941	70,433	29,117	99,550
1918-19	29,865	12,280	11,073	53,218	3,708	9,445	66,371	32,226	98,597
1919-20	33,972	13,582	11,793	59,347	7,760	10,612	77,719	38,628	116,347
1920-21	20,057	32,373	16,447	68,877	4,089	13,096	86,062	42,192	128,254

The total value of production increased by £10,000,000 in each decade from 1871 to 1891, during the early nineties there was a decline from which the recovery was slow; in 1901, however, the value of production was £3,000,000 higher than in 1891. Recovering rapidly from the effects of the drought of 1902-03, the State entered upon a period of industrial expansion, and the value of production rose in each year, except 1908, until 1914-15, when the combined effects of drought and war caused a serious decline. With the growth of settlement and the development of the manufacturing industries the State is not so dependent upon seasonal conditions as in the early nineties, and the decline of £5,500,000 in 1914-15 was succeeded by a rise of over £15,000,000 in the following year. An increase of £8,000,000 was recorded in 1917-18, next year a decline in mining production caused the total value of production to fall by £1,000,000, but in the year 1919-20 there was an improvement in all industries, and an increase of nearly £18,000,000 brought the aggregate to £116,347,000. In 1920-21 the total value was the highest on record, being nearly twice the value ten years ago and higher by £12,000,000 than in the previous year. A serious decline in pastoral production was off-set by an increased return from agriculture, which was £12,000,000 greater than in the bounteous season 1915-16, and £18,800,000 higher than in the previous year.

In 1901 the total value of production was £39,104,000, of which the primary industries yielded £29,362,000, or 75 per cent., and manufacturing £9,742,000, or 25 per cent., and the yield from rural industries represented 58 per cent. of the total. In 1911 the proportions were, rural industries

54 per cent., all primary industries 71 per cent., and manufacturing 29 per cent. In 1920-21 the rural production was valued at £68,877,000, or 54 per cent., total primary £86,062,000, or 67 per cent., and manufacturing £42,192,000, or 33 per cent.

The variations, the reason for which are mostly seasonal, in the value of production of the various industries are apparent readily from the table. Reviewing the rural industries as a group, it will be seen that the value of production increased substantially during the twenty years 1871 to 1891, viz., from £10,939,000 to £21,975,000, but the financial crisis and bad seasons impeded progress during the next decennium. The drought of 1902 was followed by favourable seasons, and the rise in value was fairly steady until 1913, when the total rural production was valued at £40,179,000. In the following season there was a decline of over £3,400,000, but in 1915-16 there was a remarkable recovery owing mainly to an increased yield in the agricultural industry, and the total value was £49,587,000. In 1916-17 agricultural production dropped to a normal level, but the advance in the other rural industries kept the total value above £49,000,000. The rise in the value of pastoral and dairying production continued during the next two seasons, and in 1919-20 the rural industries provided a return of £59,347,000. In the following season agriculture and dairying showed remarkable increases, and, though the pastoral returns diminished, the rural production yielded £68,877,000.

The development of the rural industries can be traced more conveniently by reviewing the average annual return over a period of three seasons, so as to eliminate the effect of abnormal seasons. Thus a comparison of the average return during the three seasons ending in each year from 1903 to 1920-21 will show that during the two successive periods, 1901-03 and 1902-04, the value of rural production was slightly under £22,000,000. In the three succeeding periods there was a marked increase, and the rise continued, though at a slower rate, during the next six periods until in the three years 1911-13 the average amounted to £38,100,000. The mean annual value during the three seasons ending 1914-15 was only about £400,000 higher, then the average rose by £3,700,000 in the period 1913 to 1915-16, by £3,000,000 in the next period, and by £4,700,000 in the three seasons ending June, 1918, when the average value was £50,500,000. In the three seasons ending June, 1919, there was only a slight increase in the average, then it commenced to rise rapidly, and in the three seasons ending June, 1921, the average return was equal to £60,481,000.

The value of rural production represented over 70 per cent. of the total production in 1871, but with the advance in the manufacturing industry its relative importance declined slowly. In 1891 and in 1901 the proportion was less than 60 per cent., in 1911 and in 1921 it represented 54 per cent. of the total value of production.

In the mining industry the production of metals fluctuates with the state of the overseas market, but the demand for coal has increased steadily with the increasing use of power-machinery, and it has become one of the most important items of primary production.

The mining industry, after a period of rapid development, suffered a decline as the outcome of the financial conditions of the nineties. In 1901 the prices of metals were low, and the mining activities were affected also in the following year by scarcity of water, and there was a further decline.

From 1903 to 1907 the mining industry experienced a period of prosperity owing to a substantial rise in the prices of metals and the satisfactory output of coal. In 1907 the value of production was nearly £10,300,000, but in the latter part of the year prices began to decline as a consequence of the financial crisis in America, and this caused a check to mining for

industrial metals. In 1909 labour disputes affected the trade in metals and in coal, and the annual production declined in value to £7,403,000. In the succeeding years the value of mining production rose steadily, until in 1912 and 1913 it was over £11,000,000. On the outbreak of war restrictions were imposed on the export of metals and coal, but as the war progressed arrangements were made for marketing the products and high prices were obtainable, so that in 1918 the value rose to nearly £14,000,000, which is the highest on record. During the two years 1919 and 1920 the output decreased owing to an industrial dispute at Broken Hill which caused a cessation of work on this important field from May, 1919, to November, 1920. In 1921 operations were conducted to a limited extent at Broken Hill, there was increased activity in the coal-mines, and the total value of the output was higher than in any previous year except 1918. The production from mining usually represents about 14 per cent. of the total production, but during the last three years it was only 9 or 10 per cent.

The figures relating to the manufacturing industries disclose a steady advance from the beginning of the period under review, when it was less than £2,500,000, and only 16 per cent. of the total production. In 1901 the return was four times this amount, and it represented 25 per cent. of the total value of production. Since 1903 the value of manufacturing has increased in each year, and in 1912 it exceeded the value of pastoral production for the first time in the history of the State. During the first two years of the war period the rate of increase was slower, but in each of the last five years there has been a marked increase in the value of the output, and in 1920-21 it reached the amount of £42,192,000. Since 1901 the value of production has increased fourfold, and its relative importance has risen from 25 per cent. to 33 per cent. of the total production from all industries.

The foregoing remarks relate to the actual value of production, in the following table the values per head of population are shown:—

Value of Production per Head.										
Year.	Primary Industries.							Manufacturing Industries.	Total, All Industries.	
	Rural Industries.				Forests, Fisheries, and Wild Animals.	Mining.	Total, Primary Industries.			
	Pastoral.	Agricultural.	Dairying and Farm-yard.	Total, Rural Industries.						
1871	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
1881	14 19 5	4 7 5	2 3 8	21 10 6	0 12 9	3 4 0	25 7 3	4 18 0	30 5 3	
1891	14 4 0	5 10 2	2 19 9	22 13 11	0 12 11	2 15 11	26 2 9	6 15 6	32 18 3	
1896	12 17 10	3 3 4	2 7 11	18 9 1	0 13 3	5 12 8	24 15 0	6 16 7	31 11 7	
1899	9 5 4	4 4 7	2 0 1	15 10 0	0 11 3	3 10 4	19 11 7	5 14 11	25 6 6	
1901	9 2 1	5 3 3	2 6 8	16 12 0	0 14 5	4 3 1	21 9 6	7 2 6	28 12 0	
1902	7 13 3	2 19 7	2 11 10	13 4 8	0 16 1	3 13 6	17 14 2	7 4 0	24 18 3	
1903	9 0 3	5 18 9	2 12 3	17 11 3	0 15 9	4 4 8	22 11 8	6 16 5	29 8 1	
1904	9 5 2	3 15 9	2 8 7	15 9 6	0 16 9	4 7 5	20 13 8	6 13 7	27 12 3	
1905	11 12 11	4 9 11	2 18 6	19 1 4	1 0 11	4 14 10	24 17 1	7 6 2	32 3 3	
1906	13 5 6	5 1 3	3 0 9	21 7 6	1 6 6	5 6 7	28 0 7	8 0 5	36 1 0	
1907	14 13 7	4 6 9	3 0 5	22 0 9	1 5 11	6 15 8	30 2 4	8 17 7	38 19 11	
1908	12 3 10	5 7 8	3 8 7	21 0 1	1 4 2	5 8 6	27 12 9	8 16 5	36 9 2	
1909	12 1 5	6 13 4	3 7 6	22 7 3	1 7 2	4 13 10	28 8 3	9 4 4	37 12 7	
1910	13 0 3	5 17 6	3 14 4	22 12 1	1 11 1	5 4 8	29 7 10	10 7 9	39 15 7	
1911	11 13 4	5 17 1	3 18 6	21 8 11	1 6 7	5 13 0	28 8 6	11 9 11	39 18 5	
1912	11 2 11	6 15 6	4 2 6	22 6 11	1 6 11	6 8 9	29 16 7	12 17 7	42 14 2	
1913	11 7 11	6 16 0	4 17 7	22 1 6	1 9 1	6 8 0	29 18 7	12 18 1	42 16 8	
1914-15	10 0 1	5 6 6	4 3 3	19 9 10	1 2 0	5 1 11	25 13 9	12 14 11	38 8 8	
1915-16	11 7 10	10 15 0	4 0 9	26 3 7	1 7 6	5 11 0	33 2 1	13 3 2	46 5 3	
1916-17	14 3 5	6 17 5	4 19 6	26 0 4	1 12 3	6 12 8	34 5 3	14 2 5	48 7 8	
1917-18	14 15 8	7 2 4	5 10 7	27 8 7	1 13 10	7 5 0	36 12 5	15 2 9	51 15 2	
1918-19	15 3 9	6 4 11	5 12 7	27 1 3	1 17 9	4 16 1	33 15 1	16 7 9	50 2 10	
1919-20	16 13 5	6 13 3	5 15 9	29 2 5	3 16 2	5 4 1	38 2 2	18 19 1	57 1 9	
1920-21	9 11 11	15 9 10	7 17 5	32 19 2	1 19 2	6 5 4	41 3 8	20 3 10	61 7 6	

It will be observed that the value of production per head from the pastoral industry was considerably greater in 1871, 1881, and 1891 than in subsequent years, and if allowance were made for increased prices, the volume of production per head would appear to have contracted. In the early years sheep raising was the staple industry of the colony, as the export trade in wheat did not begin until 1898. Further, while the area of land available for pastoral pursuits has actually diminished since 1871, owing to the development of agriculture, the population of the State has entered into other activities, and it is natural that the development of the pastoral industry should have proceeded more slowly than formerly.

The development in the manufacturing industries in 1871, and particularly in 1881, as measured by the value of output per head of population, was not so great as the figures appear to indicate. Firstly, there was included the output from several classes of machines used in connection with the agricultural industry and not, strictly speaking, manufactories; secondly, most of the industries were subsidiary to agricultural and pastoral activities, viz., boiling-down works, fellmongering, woolwashing, grain-mills, chaffcutting, soap and candle works. There were no ironworks, and the output of cloth from woollen and tweed mills was a small proportion of what it is now. Sugar mills, flour mills, tobacco factories, soap and candle works, distilleries and breweries only were, considering the population, well advanced in 1891.

Since 1901 there has been a fairly steady increase, except in abnormal seasons, in the return per head from rural industries, the dairying and farmyard industries showing the greatest proportionate increase. A comparison of the return per head from each of the rural industries over a period of three years shows that the annual value per head of pastoral production during the period 1911-13 was £11 8s. 4d., as against £9 8s. 10d. in the three years ended 1901, the increase being 21 per cent., from agriculture the corresponding return was £6 9s. 8d., as compared with £4 1s. 2d., or an increase of 60 per cent., while the value per head of dairy and farmyard production was almost doubled, as it rose from £2 0s. 4d. to £3 19s. 2d. The average annual value of production from rural industries was £15 10s. 4d. per head during the three years ended 1901, and it rose to £21 17s. 2d. during the seasons 1911-13. Thus the increase in the value of rural production was 41 per cent. greater than the increase in the population during the fourteen years which preceded the war; in the mining industry the increase in production was 54 per cent. greater, and in the manufacturing 81 per cent. greater. The value per head of the production from all industries in 1913 amounted to £42 16s. 8d., which was £14 4s. 8d. or 50 per cent. greater than in 1901.

There was a relative decrease during the first year of war, which was an exceptionally dry season, and the aggregate value of production showed a decrease on the year 1913 equal to £4 8s. per head of population. But in 1915-16 all the industries showed an increased value per head, especially agriculture, which advanced to £10 15s., as compared with £5 6s. 6d. in the previous year. In 1916-17 the agricultural production dropped to the normal level, being about £6 17s. 5d. per head, but in the other industries substantial increases were recorded. In 1917-18 all the industries showed an increase as compared with the previous year. A decrease in 1918-19 was caused by a marked decline in the mineral production, but in 1919-20 the value per head rose to £57 1s. 9d. In 1920-21 the return per head from agriculture amounted to £15 9s. 10d., and the return from all industries was £61 7s. 6d., which was the highest during the period under review.

The increase in the production from the various industries in relation to the population may be seen readily in the following table of index numbers, to obtain which the values per head of the different industries in 1911 were called 1000 and related to the corresponding values per head in the other years.

Year.	Value of Production per Head—Index Numbers.								
	Primary Industries.							Manu- facturing Indus- tries.	Total All Industries.
	Rural Industries.				Forests, Fisheries, and Wild Animals.	Mining.	Total, Primary Indus- tries.		
	Pastoral.	Agricul- tural.	Dairying and Farm- yard.	Total, Rural In- dustries.					
1871	1283	747	556	1004	480	566	892	426	758
1881	1217	941	761	1058	486	495	920	589	824
1891	1105	541	610	861	498	997	871	594	791
1896	794	722	511	723	423	622	689	500	634
1901	780	882	594	774	542	735	755	620	716
1902	657	509	660	617	605	650	623	626	624
1903	772	1014	666	819	592	749	794	593	737
1904	794	647	619	722	630	774	728	603	691
1905	998	768	745	889	787	839	874	636	806
1906	1138	865	774	997	997	943	986	698	903
1907	1258	741	770	1028	975	1201	1060	772	977
1908	1045	920	874	979	909	960	972	767	913
1909	1035	1181	860	1042	1022	830	1000	802	943
1910	1115	1004	947	1054	1169	926	1034	904	996
1911	1000	1000	1000	1000	1000	1000	1000	1000	1000
1912	955	1157	1051	1028	1012	1139	1049	1120	1070
1913	977	1162	988	1029	1094	1133	1053	1123	1073
1914-15	858	910	1061	909	828	902	904	1109	963
1915-16	976	1836	1029	1221	1034	982	1165	1145	1159
1916-17	1215	1174	1268	1213	1213	1174	1205	1228	1212
1917-18	1267	1216	1409	1279	1461	1283	1288	1317	1297
1918-19	1302	1067	1434	1262	1420	850	1187	1426	1256
1919-20	1429	1136	1475	1358	2865	921	1342	1649	1430
1920-21	822	2646	2005	1537	1473	1109	1449	1756	1537

In 1920-21 the per capita value of production from the rural industries was 49 per cent. higher than in 1913, the return per head from the pastoral industry was 16 per cent. lower, but the return from agriculture and dairying was more than doubled. In the mining industry there was a decline of 2 per cent., and in the manufacturing an increase of 56 per cent., the return per head from all industries being 43 per cent. higher. As compared with the previous season, the value per head was 7 per cent. higher in 1920-21. The pastoral industry yielded a value 44 per cent. lower, and the return per head from forests, fisheries, etc., declined by 49 per cent.; but agriculture advanced by 133 per cent., dairying 36 per cent., mining 20 per cent., and manufacturing 6 per cent.

It is interesting to compare this table of index numbers with the index numbers on page 618, which relate to the volume of production per head.

The foregoing tables which relate to the actual value of production in each year do not afford any indication of the changes in the two factors which determine the value, viz., quantities produced and prices obtained.

The variations in the prices obtained in each year since 1901, are illustrated in the following table of production price index numbers. In computing the index numbers the standard used as a basis of measurement was the

annual average production during the ten years 1906 to 1915-16. The prices of all the commodities included in ascertaining the value of production were not used, as it is not possible to relate them all to a unit of quantity, but the commodities which were used account for 75 or 80 per cent. of the value of production.

For each of the primary industries the average annual quantity of each of the principal commodities produced during the period 1906 to 1915-16 was multiplied by the average price obtained in each year, and the aggregate value of the items in each year thus calculated is the basis of the price index number of the industry. Similarly the sum of the aggregate values of each industry in the groups—rural and primary—forms the basis of the price index numbers of those groups.

The wholesale price index numbers of all commodities as shown in the chapter "Food and Prices," were taken as indicating the movement of prices in the manufacturing industries. As there was no information available regarding the quantity-production in many branches of the manufacturing industries, the total value of production in each year from 1906 to 1915 was divided by the wholesale price index numbers for the same year, and the resulting quotients were assumed to represent the quantity of goods produced in the year. From these the mean annual quantity production of the ten years was obtained, and this was multiplied by the wholesale price index number for each year since 1901 to give the aggregate value of production on the same basis as the values for the primary industries.

The above method of measuring the movement of prices of local manufacture is open to objection, and it has been used with reluctance. Imported goods represent one-third in value of the commodities used in estimating the movement of wholesale prices, but they certainly do not represent one-third in value of the raw materials used in factories. As the movements of prices of Australian and imported commodities vary considerably, and, in fact, are sometimes in opposite directions, it is evident that the figures, so far as they concern the manufacturing industry, are seriously affected by the fact that too great a weight is assigned to imported articles.

It is the opinion of the author that better results would be given by deducing price levels of materials and of output separately, and from them deriving a new "added value" or value of production, which would show more accurately the relative productivity per head. A number of industries, therefore, were selected, mostly those dealing with agricultural and pastoral products, for which particulars are obtainable concerning the materials used and the articles manufactured. Unfortunately, however, although for most of the raw materials and manufactured articles the quantity used or produced and the price were obtainable, there were a number of miscellaneous commodities used or produced, which in the aggregate represented a large value, for which similar details were not available. It was found that complete details regarding both quantity and price were available for commodities constituting only 32 per cent. of the total value of materials used and 44 per cent. of the total value of articles produced in local factories. It was deemed unwise to attempt to deduce price levels from the prices of commodities representing such a small proportion of the total.

A further investigation was then made by applying the primary production price index numbers to the value of materials used in factories and the wholesale price index numbers to the value of the output, the difference being taken to represent the apparent value of production. This method also gave an unsatisfactory result.

It is very questionable whether the movement of prices of manufactured products, as a whole, can be measured with sufficient accuracy to justify its use to determine the relative productivity over a period of years.

The products of the industries are so diverse that it is impossible to obtain an accurate result by applying any conventional method of determining a general movement. In each of the primary industries the prices of the products move usually, but not always, in the same direction, but not so the prices of products in different industries. For instance, while the prices of pastoral products may be rising, the prices of minerals may be falling. Yet all primary products are extensively used as raw material in factories, and, in addition, partly manufactured goods enter largely into use. Thus, the determination of price levels for manufactured products presents a problem so complex that its solution is quite impossible from the data available at present.

Industries engaged in treating raw material the product of pastoral pursuits, oils and fats, or in the preparation of food, drink, etc., use approximately 50 per cent. in value of all the materials used in factories. If, as the result of bad seasons, there is not a sufficiency of raw materials, there must be a diminished output. The question then becomes one of diminished opportunity to produce rather than of diminished productivity on the part of the factories.

That the manufacturing industry depends largely upon the primary industries cannot be doubted. If the season is favourable for primary industries, the ensuing period in all probability will be profitable for the manufacturer, inasmuch as there will be not only plenty of raw material to work upon, but more money available for the purchase of his goods.

The values obtained in the manner described were added to the values calculated for the primary industries, and the aggregate values of the year 1911 were adopted as base, and divided into the aggregates of the other years to obtain the production price index numbers.

	Production Price Index Numbers.								
Year.	Primary Industries.						Manufacturing Industries.	Total, All Industries	
	Rural Industries.				Forests, Fisheries and Wild Animals.	Mining.			Total, Primary Industries.
	Pastoral.	Agricultural.	Dairying and Farm-yard.	Total, Rural Industries.					
1901	793	1,204	946	933	792	1,002	940	929	
1902	865	1,672	1,293	1,158	791	956	1,107	1,097	
1903	1,083	812	1,088	1,005	812	963	989	1,005	
1904	1,037	856	843	958	817	915	945	935	
1905	1,127	876	952	1,030	891	930	1,007	933	
1906	1,169	834	925	1,039	892	1,017	1,029	955	
1907	1,201	1,280	944	1,190	874	1,058	1,154	1,109	
1908	1,044	1,063	1,044	1,049	904	975	1,030	1,046	
1909	972	953	993	969	979	975	971	984	
1910	994	837	998	949	1,045	980	958	997	
1911	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
1912	1,089	962	1,173	1,063	1,084	1,080	1,067	1,129	
1913	1,103	979	1,105	1,067	1,181	1,078	1,074	1,092	
1914-15	1,092	1,611	1,182	1,255	977	1,159	1,227	1,247	
1915-16	1,367	1,105	1,342	1,287	1,190	1,405	1,304	1,504	
1916-17	1,752	1,047	1,439	1,505	1,412	1,620	1,521	1,568	
1917-18	1,814	1,202	1,498	1,593	1,710	1,650	1,608	1,839	
1918-19	1,718	1,494	1,703	1,651	1,534	1,752	1,664	1,996	
1919-20	1,815	2,849	1,908	2,129	2,527	1,984	2,120	2,326	
1920-21	1,368	1,887	2,465	1,665	2,348	1,879	1,731	2,278	



The price of wool is the main factor in the production price index numbers of the pastoral industry, though the price of meat also influences it. The chief products of the agricultural industry are wheat and hay; in a good season the price of wheat depends on the price in the world markets, but in the event of a scanty harvest the total yield is needed for local consumption, and the price is higher. The average price of butter, the principal dairy product, does not usually fluctuate from year to year to the same extent as the prices of other primary products.

In the mining industry the principal metal products, silver and lead, are exported, and the prices depend on the condition of the oversea markets: the price of coal, which represents on the average about one-third of the annual value of mineral production, is dependent mainly on local conditions, as the bulk of the output is consumed within the Commonwealth.

The index numbers for the manufacturing industries, *i.e.*, the wholesale price index numbers, have been discussed in detail in the chapter "Food and Prices."

In order to measure from year to year the volume of production, it is necessary to state the values as they would have been if the same prices had been obtained in each year throughout the period under review.

The annual values of the products from 1901 to 1920-21, computed on the 1911 prices, are shown in the following statement; they were calculated for each industry by dividing the actual value of production in each year by the production price index number of the year as shown in the preceding table:—

Volume of Production (computed on 1911 prices).									
Year.	Primary Industries.						Manu- facturing Industries.	Total, All Industries.	
	Rural Industries.				Forests, Fisheries and Wild Animals.	Mining.			Total Primary Indus- tries.
	Pastoral.	Agri- cultural.	Dairying and Farmyard.	Total Rural Industries.					
	£000	£000	£000	£000	£000	£000	£000	£000	£000
1901	15,696	5,864	3,370	24,930	1,245	5,670	31,845	10,777	42,622
1902	12,296	2,475	2,785	17,556	1,407	5,337	24,300	9,328	33,628
1903	11,710	10,294	3,379	25,383	1,369	6,187	32,939	9,214	42,153
1904	12,754	6,325	4,114	23,193	1,469	6,823	31,485	10,866	42,351
1905	15,033	7,469	4,470	26,972	1,707	7,416	36,095	11,394	47,489
1906	16,861	9,014	4,871	30,746	2,207	7,781	40,734	12,467	53,201
1907	18,552	5,147	4,858	28,557	2,247	9,731	40,535	13,468	54,003
1908	18,052	7,826	5,078	30,956	2,071	8,599	41,626	12,565	54,191
1909	19,588	11,446	5,359	36,393	2,188	7,593	46,174	14,335	60,509
1910	21,155	11,342	5,019	38,516	2,408	8,628	49,552	16,845	66,397
1911	19,434	9,749	5,534	35,717	2,213	9,410	47,340	19,143	66,483
1912	17,851	12,284	6,131	36,266	2,165	10,397	48,828	19,897	68,725
1913	18,801	12,644	6,392	37,837	2,239	10,808	50,884	21,504	72,388
1914-15	17,260	6,227	6,638	30,125	2,123	8,286	40,534	19,255	59,789
1915-16	15,783	18,427	5,700	39,910	2,187	7,485	49,582	16,574	66,156
1916-17	15,321	12,428	6,546	34,295	2,164	7,756	44,215	17,059	61,274
1917-18	15,675	11,385	7,099	34,159	2,185	8,449	44,793	15,414	60,207
1918-19	17,384	8,220	6,502	32,106	2,417	5,391	39,914	16,145	56,059
1919-20	18,717	4,767	6,181	29,665	3,071	5,349	38,085	16,607	54,692
1920-21	14,662	17,156	6,672	38,490	1,741	6,970	47,201	18,522	65,723

The volume of production almost doubled during the period 1902 to 1910, and continued to rise until it reached the highest level in the year 1913; the

rural industries yielded a larger output in 1910, the year of maximum pastoral production, and in 1915-16 and 1920-21, with the abundant yields of agricultural products; the production of the mining and manufacturing industries was greatest in 1913. In the first year of the war there was a decline of 17 per cent. in the total production; in the following year there was a marked improvement as the result of the abundant wheat harvest; then the volume declined rapidly until 1919-20, when it was not much greater than in 1908. In 1920-21 there was a marked improvement in all the important industries, except the pastoral, which yielded the lowest volume of production since 1904.

As compared with 1913, the year of maximum production, the volume of production was 9 per cent. lower in 1920-21, but the prices were so much higher that the actual value of production was 65 per cent. higher.

In order to show the volume of production, or the productive activity, in relation to the population, *i.e.*, the quantity produced per head, the values in the foregoing table are stated below on a per capita basis:—

Volume of Production per Head (1911 Prices).										
Year.	Primary Industries.							Manufacturing Industries.	Total, All Industries.	
	Rural Industries.				Forests, Fisheries, and Wild Animals.	Mining.	Total, Primary Industries.			
	Pastoral.	Agricultural.	Dairying and Farmyard.	Total, Rural Industries.						
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
1901	11 9 8	4 5 10	2 9 3	18 4 9	0 18 2	4 3 0	23 5 11	7 17 8	31 3 7	
1902	8 17 1	1 15 8	2 0 1	12 12 10	1 0 3	3 16 11	17 10 0	6 14 5	24 4 5	
1903	8 6 5	7 6 3	2 8 0	18 0 8	0 19 6	4 7 11	23 8 1	6 10 11	29 19 0	
1904	8 18 6	4 8 7	2 17 7	16 4 8	1 0 7	4 15 6	22 0 9	7 12 1	29 12 10	
1905	10 6 8	5 2 8	3 1 6	18 10 10	1 3 6	5 1 11	24 16 3	7 16 8	32 12 11	
1906	11 7 2	6 1 5	3 5 7	20 14 2	1 9 9	5 4 10	27 8 9	8 7 11	35 16 8	
1907	12 4 5	3 7 10	3 4 9	18 16 3	1 9 7	6 8 3	26 14 1	8 17 5	35 11 6	
1908	11 13 7	5 1 3	3 5 2	20 0 7	1 6 9	5 11 3	26 18 7	8 2 7	35 1 2	
1909	12 8 5	7 5 2	3 7 11	23 1 6	1 7 9	4 16 3	29 5 6	9 1 9	38 7 3	
1910	13 1 10	7 0 4	3 14 6	23 16 8	1 0 9	5 6 9	30 13 2	10 8 6	41 1 8	
1911	11 13 4	5 17 1	3 18 6	21 8 11	1 6 7	5 13 0	28 8 6	11 9 11	39 18 5	
1912	10 4 8	7 0 10	3 10 4	20 15 10	1 4 10	5 19 3	27 19 11	11 8 2	39 8 1	
1913	10 6 7	6 19 0	3 10 3	20 15 10	1 4 7	5 18 9	27 19 2	11 16 4	39 15 6	
1914-15	9 3 3	3 6 1	3 10 5	15 19 9	1 2 6	4 8 0	21 10 3	10 4 5	31 14 8	
1915-16	8 6 8	9 14 7	3 0 2	21 1 5	1 3 1	3 19 1	26 3 7	8 15 0	34 18 7	
1916-17	8 1 9	6 11 3	3 9 2	18 2 2	1 2 10	4 1 11	23 6 11	9 0 1	32 7 0	
1917-18	8 3 0	5 18 4	3 13 10	17 15 2	1 2 9	4 7 10	23 5 9	8 0 4	31 6 1	
1918-19	8 16 10	4 3 7	3 6 2	16 6 7	1 4 7	2 14 10	20 6 0	8 4 2	28 10 2	
1919-20	9 3 8	2 6 9	3 0 8	14 11 1	1 10 2	2 12 6	18 13 9	8 3 0	26 16 9	
1920-21	7 0 4	8 4 2	3 3 10	18 8 4	0 16 8	3 6 9	22 11 9	8 17 3	31 9 0	

As the bulk of the production comes directly or indirectly from the rural industries, the volume is affected greatly by seasonal conditions. It is noticeable that the production per head was higher in each of the five years preceding the war than at any other time during the last twenty years. The maximum rate per head was in the year 1910, though the total volume of production, as shown in the previous table, was greatest in 1913. In 1914-15 there was a decrease which affected nearly all industries; an improvement in 1915-16 was followed by a decline, which persisted throughout the remainder of the period. In 1919-20 the production per head was lower than in any year of the period, except 1902; the decline is noticeable in regard to all the important industries. In the following year the value of pastoral production per head was the lowest on record, but the other industries showed a general increase, and the return from all industries was higher than in the preceding three years.

Taking the annual average during the last three seasons, the volume per head of the production from the rural industries was 22 per cent. lower than in the three years 1911-13; the volume per head of pastoral production was 22 per cent. lower, agricultural was 26 per cent. lower, and dairying was 11 per cent. lower.

The variations from year to year, in the volume of production per head, or relative productive activity, in each industry and group of industries may be seen in the following statement, in which the per capita rates in the preceding table are shown in the form of index numbers, the value per head in 1911 having been taken as a basis, and called 1,000:—

Year.	Volume of Production per Head—Index Numbers.								
	Primary Industries.							Manu- facturing Indus- tries.	Total, All Industries
	Rural Industries.				Forests, Fisheries and Wild Animals.	Mining.	Total Primary Indus- tries.		
	Pastoral.	Agri- cultural.	Dairying and Farmyard.	Total Rural Industries.					
1901	984	733	627	850	683	735	820	686	781
1902	759	305	511	589	762	681	616	585	607
1903	713	1,249	611	841	734	778	823	569	750
1904	765	757	734	757	774	845	775	661	743
1905	886	877	783	865	884	902	873	681	818
1906	974	1,037	835	966	1,119	928	965	730	898
1907	1,047	579	815	877	1,113	1,135	939	772	891
1908	1,001	865	838	934	1,006	985	947	707	878
1909	1,065	1,240	865	1,076	1,044	852	1,030	791	961
1910	1,122	1,199	949	1,111	1,119	945	1,079	907	1,029
1911	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912	877	1,203	86	969	934	1,055	985	992	987
1913	885	1,187	895	969	925	1,051	984	1,028	996
1914-15	785	564	897	745	846	779	757	889	795
1915-16	714	1,662	767	982	868	700	921	761	875
1916-17	693	1,121	881	844	859	725	821	783	810
1917-18	699	1,011	941	823	856	777	819	697	784
1918-19	758	714	843	761	925	485	714	714	714
1919-20	787	399	773	679	1,135	465	657	709	672
1920-21	601	1,402	813	859	627	590	795	771	788

The year 1901 was generally favourable to the rural industries, but it was followed by a drought, which affected practically the whole State, and the relative productive activity declined by almost one-third. From 1904 onward the rural industries expanded rapidly; and, except for a decline owing to the failure of the wheat crop in 1907, the index number of productive activity rose in each year, attaining the maximum of the period in 1910. In the year 1911 the progress of dairying continued, but the season was not so favourable to the pastoral and agricultural industries, and the index number declined by 10 per cent.

During 1912 there was a further decline of 3 per cent.; the pastoral industry, which is the chief source of rural production, suffered severely owing to drought in the grazing areas during the first six months of the year, and the number of sheep was reduced by nearly 6,000,000. The dairying industry also was affected by the dry weather, but the agricultural areas benefited by abundant rains during the latter part of the year.

In 1913, although cultivation was extended, the average yield per acre of the principal crops was somewhat lower than in the previous year. The season was not, on the whole, favourable to the pastoralists and dairy-farmers, but the volume of their production did not decrease.

In 1914-15 the index number of rural productive activity was the lowest since 1902, being 25 per cent. lower than in 1911. A severe drought affected a large portion of the State, and many crops failed entirely; the pastoralists experienced serious losses, and the number of sheep in June, 1915, was 12,000,000 less than at the end of 1911. The drought was not so severe in the dairying districts, and there was a slight increase in the rate of production.

In 1915-16 the relative productive activity in rural industries showed an increase of 32 per cent. as compared with the previous year. The improvement was due to increased agricultural production, as large areas were brought under wheat cultivation to supply the demand for export; high prices were obtainable, and the ploughing season was favourable. This improvement was minimised by a further decrease in pastoral production, owing to a shortage of stock resulting from the drought, and by a marked decline in the dairying production.

In 1916-17 the high rate of agricultural production was not maintained, owing to the unsettled state of the market, the difficulties as to disposal of the harvest, and the shortage of labour owing to war enlistments, added to which the ploughing season was unfavourable. The decline in pastoral production continued; dairying, however, showed a substantial improvement.

In 1917-18 the dairying and pastoral industries showed slightly increased production, but there was a further decline in agricultural production; and the index number of productive activity was somewhat lower than in the previous year. In 1918-19 it declined by 10 per cent.; the season was very dry, the area under crop declined by about 570,000 acres, and the dairy production showed a marked decline. The pastoral industry, though affected severely by drought, showed somewhat better results.

The season 1919-20 was disastrous to the agricultural industry, and the rate of production was the lowest since 1902, being 60 per cent. lower than in 1911. The dairy production declined also, but the pastoral industry showed a slight improvement. The index number of the rural industries as a group declined by 30 per cent. during the four seasons ended June 1920.

In 1920-21 the wheat areas experienced a favourable season, and the harvest was exceptionally large; the pastoral industry suffered a serious set back owing to a decline in the oversea meat trade, and the production of wool declined on account of the losses of stock in the previous season; the condition of the dairying industry improved. The index number of all the rural industries combined was the highest since 1915-16, though it was 14 per cent. lower than in 1911.

Briefly, the pastoral industry, after the drought of 1902-3, entered upon a period of steady expansion, the productive activity being greatest during the five years 1907 to 1911. The subsequent decline may be attributed to the heavy losses of live stock through drought during 1912, 1914-15, and 1919-20. No season since 1911 has been generally favourable to the pastoralists, but this class of industry has received greater attention during recent years, owing to the high prices and the facilities for marketing the products. After the war, however, the frozen meat trade declined. The index number of productive activity in the agricultural industry was high throughout the period 1909 to 1917-18, except in the season 1914-15. It reached a maximum in 1915-16, and then declined on account of the disturbances of the oversea trade, the difficulty in disposing of the harvests, the scarcity of labour during the war period, and the prospect of better returns from sheep-farming. The decline in 1919-20 was due to seasonal conditions; in the following season activity was stimulated by a guarantee of a high price, and the season was good. The dairy industry showed steady improvement from 1903 to 1911; fluctuations in production since 1911 were due mainly to seasons, though difficulty in obtaining shipping space affected the industry to some extent during the war period.

The returns from forestry and fisheries are relatively small, as these industries have not been developed, and employ comparatively small numbers of men.

The production from forestry, fisheries, and wild animals increased slowly from 1901 to 1905; then the rapid development of rabbit-trapping as an industry led to a more rapid increase. Progress in forestry and fisheries, however, did not keep pace with the increase in the population, and the relative productive activity had been decreasing for some years prior to the war. The decline continued during the early years of the war period; then an abnormal rise in prices for rabbit and marsupial skins stimulated activity in this branch of industry.

As to mining, the prices of the industrial metals were low during the opening years of the period under review, and production was somewhat restricted; as prices advanced activity in mining increased until in 1907 it reached the maximum of the period 1901 to 1921. Prices of metal dropped in the latter part of 1907, and the index number declined in the two following years. From 1910 onwards prices improved gradually, and the productive activity increased, so that in 1912 and 1913 it was 24 per cent. higher than in 1909. A serious decline occurred in 1915, owing to the war; it became necessary to restrict the oversea export of coal, and the cessation of trade with the belligerent countries closed the main outlet for the metal products, and caused a curtailment of operations in metalliferous mines. As the war continued, the demand for industrial metals increased, and prices rose considerably, but the rate of production decreased in 1916 owing to industrial unrest at Broken Hill and Cobar, also in the coal-mining districts, where

the mines were idle from October to December owing to a strike. In the following year, 1917, the rate of productive activity improved, but it was 27 per cent. below that of 1911.

In 1918 there was a marked improvement as the result of high prices and the absence of serious disputes; but in 1919 the relative production dropped to a point nearly 52 per cent. below the basic year. The Broken Hill mines closed in May on account of a labour dispute, which was not settled until November, 1920; the drought militated against the exploitation of the mineral deposits in many districts, and the seamen's strike affected the export trade in coal. In 1920 the output of coal was higher than in any earlier year, but metal-mining showed no improvement.

In 1921 the index number was much higher, though still 41 per cent. below that of the year 1911. The output of coal continued to rise and operations were undertaken on a limited scale at Broken Hill, so that the quantity of silver and lead produced was greater than in 1919, though the prices of the industrial metals were much lower.

The rate of production in the manufacturing industries rose in each year except 1908; during the period 1903 to 1911, it declined slightly in 1912, but rose above the former level in the following year. The trade dislocations following the outbreak of war caused a great decrease in the output of the factories, while many industries were affected also by drought, and the relative volume of production declined in 1914-15 and in 1915-16. A slight improvement took place in 1916-17, when many factories were engaged continuously in the production of war materials. In the following year, however, the productive activity reached the lowest level since 1905, the index number being 30 per cent. below that of 1911; the output was reduced to some extent during this year by the strike, which commenced in the railway workshops in August, 1917. A slight improvement took place in 1918-19, but the volume of production was 29 per cent. below that of 1911. The rate was slightly lower in the following year, when there was a marked decline in the productive activity in most of the primary industries. The rate rose in 1920-21, but was still 23 per cent. below the level of 1911.

The foregoing tables show that the volume of production, which had been rising steadily for eight years, has declined in a marked degree since 1910 and 1911. As stated above, the main causes in regard to the rural industries were unfavourable seasons, and, during the war period, shortage of labour; and in the mining industry production was affected by trade dislocations and industrial disputes. The manufacturing industries reflect to a considerable degree the diminished production of the primary industries. The shortage of labour and the scarcity and high cost of raw materials affected the output of many factories, while the absence of men on war service, and the high prices, caused a reduction in the demand for the products. These industries are more or less domestic concerns, making necessities for local consumption; there is practically little or no export of manufactured articles, except foods.

#### *Relative Production—Principal Commodities.*

It is not possible to quote the production per employee in the various industries, as, except in the manufacturing industries, the number of employees is not recorded accurately. The following statement shows, in regard to the principal commodities, the average annual production, absolute

and per head, during the three-year periods, 1901-03 and 1919-21, in comparison with the three pre-war years, 1911-13, which also were years of high production:—

Product.	Average Annual Production (000 omitted).			Average Production Per Head.		
	1901-03.	1911-13.	1919-21.	1901-03.	1911-13.	1919-21.
Wool, Greasy ... .. lb.	251,497	352,112	280,828	181·2	202·0	138·2
Tallow ... .. cwt.	312	698	542	·2	·4	·3
Meat, Frozen (Exported)—						
Beef ... .. lb.	5,963	11,120	7,002	4·3	6·4	3·4
Mutton ... .. "	27,427	63,828	30,451	19·7	36·6	15·0
Lamb ... .. "	14,378*	13,373	18,483	10·4	7·7	9·1
Butter ... .. "	35,912	79,198	71,137	25·9	45·4	35·0
Cheese ... .. "	4,245	5,845	6,384	3·1	3·4	3·1
Bacon and Ham ... .. "	9,314	15,940	16,576	6·7	9·1	8·2
Wheat ... .. bush	14,576	31,865	26,113	10·5	18·3	12·9
Maize ... .. "	4,577	4,691	3,440	3·3	2·7	1·7
Potatoes ... .. cwt.	844	1,824	957	·6	1·0	·5
Hay ... .. "	10,741	18,612	18,059	7·7	10·7	8·9
Coal ... .. ton.	6,088	9,664	10,047	4·4	5·5	4·9
Coke ... .. cwt.	2,775	9,217	16,713	2·0	5·3	8·2
Gold ... .. oz.	233	200	55	·2	·1	·0
Silver ... .. "	872	2,117	1,118	·6	1·2	·6
Silver-lead, Ore, etc. ... cwt.	7,647	7,167	936	5·5	4·1	·5
Zinc ... .. "	151	10,290	1,487	·1	5·9	·7
Timber, Sawn ... .. sup. ft.	127,509*	169,078	155,224	91·8	97·0	76·4
Fish, Fresh ... .. lb.	14,532	15,499	21,074	10·5	8·9	10·4
Rabbit Skins (Exported) ... lb.	756*	5,305	7,808	·5	3·0	3·8
Iron, Pig ... .. cwt.	150	771	1,714	·1	·4	·8
Portland Cement ... .. "	372	2,374	2,429	·3	1·4	1·2
Beer and Stout ... .. gal.	14,420	21,665	27,014	10·4	12·4	13·3
Tobacco ... .. lb.	3,668	6,370	10,734	2·6	3·7	5·3
Biscuits ... .. "	10,122*	24,175	41,815	7·3	13·9	20·6
Boots and Shoes ... .. pairs	3,016	3,752	3,570	2·2	2·2	1·8
Bricks ... .. No.	180,887	366,985	319,219	130·4	210·5	157·1
Candles ... .. lb.	3,364	5,511	4,402	2·4	3·2	2·2
Gas ... .. 1,000 cub. ft.	2,311	4,878	9,181	1·7	2·8	4·5
Jam ... .. lb.	19,498*	27,767	38,083	14·0	15·9	18·7
Soap ... .. "	22,748	31,670	35,120	16·4	18·2	17·3
Sugar, Refined ... .. cwt.	1,190	1,834	2,253	·9	1·1	1·1
Meat, Preserved ... .. lb.	15,675	25,501	14,903	11·3	14·6	7·3
Tweed and Cloth ... .. yd.	516	1,170	2,288	·4	·7	1·1

\* Estimated.

The statement shows in regard to 35 staple commodities that the quantity produced per head between 1911-13 and 1919-21 increased in 11, decreased in 23 cases, and in one case the quantity was the same in both periods. Amongst those which decreased were the important commodities of wool, meat, butter, wheat, coal, silver-lead, and timber; none of the increases has been nearly sufficient to off-set these.

# INDUSTRIAL HISTORY OF NEW SOUTH WALES

FROM 1901 TO 1921.

## *Introduction.*

THE "Industrial History" of the State up to 1899 is described in "The Wealth and Progress of New South Wales," 1897-8. The present history of the twenty-one years following 1900 is on a somewhat broader basis, in view of the wider outlook which has come with Federation and of the rapid economic development of the State, which began early in the present century.

The matters which have influenced the industrial history of the State since 1900 have been treated from time to time in the various editions of the "Official Year Book," but a connected account of the whole period was not published until 1921. It is now republished in a revised form in order to incorporate important new matter which has become available regarding wages and wealth, and to make necessary adjustments in *per capita* rates contingent on the revision of estimates of population as a result of the census of 1921. This account is not put forward as an exhaustive analysis of the various movements of these eventful years. Its aim is rather to expound the facts than to discuss them. Controversial statements have been avoided, it being left to the reader to draw his own conclusions, either from the facts before him or from further research.

\* \* \* \* \*

The conditions existing in New South Wales at the beginning of the twentieth century became suddenly, by a peculiar combination of circumstances, very different from those which had prevailed in the period which preceded it.

The era of prosperity and rapid expansion which had begun in 1873 reached its culmination in the late eighties, and ended disastrously in the banking crisis of 1893. Then followed a period of stagnation, marked by low prices, low wages, and restricted enterprise. The bottom of the downward trend was reached in 1896, and by 1899 an upward movement in wages, prices, and business activity was in progress. This movement was heralded by the short-lived wool boom of 1899. Though the change was at first slow and halting, and retarded by the recurrent bad seasons which hampered primary production from 1895 to 1903, it steadily gained momentum, and became the most potent factor in determining the future course of events.

Two movements of import were under weigh in the politics and government of the State. The rise of the Labour Party as a power in Parliament had almost synchronised with the growth of the movement which led to the federation of the six Australian States, and the progress of the two movements, though proceeding independently, advanced almost step for step. The proposed Federal Constitution was accepted by the electors of New South Wales in June, 1899, only three months before the Labour Party in Parliament was able to assert its weight definitely in the affairs of government, by replacing the Reid Ministry with a party more amenable to its will.

In 1896 the abolition of nearly all import duties virtually restored to the State a policy of freetrade, but when Federation was accomplished finally, and the administration of Customs was transferred to the Commonwealth, the prolonged party dissensions on the fiscal policy of the State ceased.



The banking crisis of 1893 had produced drastic changes in the conduct of private finance. A system of easy credit was replaced by a policy of the utmost watchfulness and caution on the part of the associated banks, which acted effectively in checking excessive speculation. This altered policy safeguarded the community from the danger of another financial disaster in the long period of prosperity which began in 1903, and facilitated the easy monetary conditions which existed during the War.

Important consequences to trade and industry resulted from causes which were now beginning to operate. The perfection of the system of cold storage enabled the transport of meat, butter, and other perishable goods over long distances to foreign markets, while the development of agriculture produced, in 1898, the first surplus of wheat for export oversea. In this way the number of exportable articles was increased, the volume of exports became less dependent upon the fluctuations of the wool seasons, and as New South Wales tended to become more closely linked with international markets, the vicissitudes of its progress were determined more than in the past by the influence of world markets and world finance.

One of the most powerful influences operating in the conduct of trade and industry in the twenty-one years about to be reviewed—trade-unionism in its new and bolder phase—was absent prior to 1900. For sixty years organisations of employees had grown steadily, but during the depressed period which followed the unsuccessful strike of 1890, growth was retarded. The great scarcity of employment rendered the times unpropitious for organising employees, and claims for improved conditions or even for maintenance of former standards were rendered nugatory by the fact that men usually were glad to obtain employment under any tolerable conditions. Though, after, 1896 trade conditions showed signs of improving, and it was becoming possible again to promote the spread of unionism, few new bodies were organised to replace the many which were decaying.

During the five years prior to 1900 a demand sprang up for a measure of arbitration which would contain more substance than the shadowy enactment of 1892; but the opposition of the employers and the action of the Legislative Council for some years kept the movement in check. Mr. Reid's bill of 1894-5 failed to pass the Legislative Council, while the Act of 1899, which was principally conciliatory, was passed without any provision for the enforcement of awards. This half-hearted measure gave no satisfaction, and agitation for a more comprehensive enactment continued.

Thus, when the new century opened, it raised the curtain on a new scene on the stage which was already set for those important developments which have characterised the two decades under review.

The industrial history of the State during these years falls more or less naturally into four periods—the first from 1901 to 1909, during which the State, recovering from the depression of the nineties, progressed rapidly, while a cautious spirit governed its finance; the second beginning in 1910, when productive activity reached its highest point, remaining high until 1914—a period in which the annual expenditure of loan money by the Government more than doubled; the third, a period of declining production, due to the effects of drought and war, though high prices and a heavy governmental expenditure produced an appearance and many of the effects of prosperity. The fourth, a period of deflation, began in 1921.

#### 1901—1909.

It was in the circumstances just briefly described that the movement towards union among the Australian States, which had been discussed intermittently since 1847, was consummated. The bill embodying the proposed

Constitution of the Commonwealth was approved by the Australian electors in 1899, and transmitted to the Home Government for consideration. With minor modifications, it received the Royal Assent on 9th July, 1900, and came into operation on 1st January following.

This Constitution established in Australia a new political community with a wide range of powers as plenary as the Imperial Parliament could bestow. These powers were enumerated, and in a large measure regulated, by the provisions of the Constitution, and, except where it was provided that they should be exclusive of the powers of the States, were concurrent with them. To some extent a duplication of the machinery of government resulted. The powers of the State Legislatures continued undiminished in most respects, but it was provided that a law of the State should be invalid to the extent of any inconsistency with a law of the Commonwealth. Subject to the Constitution and to the supremacy of the British Parliament, both the Commonwealth and the several States were to possess sovereign powers, and all laws of the States continued in force until superseded by valid Federal enactments.

Federation produced one immediate outstanding effect on the trade and policy of New South Wales, when, by the imposition by the Federal Government of uniform customs and excise duties throughout Australia on 8th October, 1901, interstate freetrade was established, and the newly-adopted policy of virtual free-trade was supplanted by a moderate protection. The weight of the new taxation fell chiefly on sugar, agricultural produce, groceries, oils, paints, earthenware, drugs, wood, jewellery, and leather.

A Federal High Court was established in 1903 as a superior court for all Australia, and it began the important work of elucidating the principles of the new Constitution. From its successive decisions the line of demarcation between State and Federal powers gradually became clearer. It was called upon early to decide cases of the greatest importance to the trade, commerce, and industry of the State, notably in connection with trusts, industrial arbitration, and "new" protection.

Still further important changes in the governmental relationship to industry now came. In 1904 the control of patents and trade-marks was transferred from State to Commonwealth, and the Commonwealth Court of Conciliation and Arbitration was established with jurisdiction in interstate industrial matters. The early tendency of this court to grant higher wages than the State courts, the interstate spread of unions, and the consequent tendency to create disputes in several States simultaneously gave this court ultimately an important place among the agencies governing industrial conditions in New South Wales, thereby producing a certain amount of confusion, remedies for which have been considered from time to time.

The reversal of the fiscal policy with the advent of Federation proved fortuitous for the finances of New South Wales. The new Constitution provided that at least three-quarters of the Customs revenue of the Commonwealth should be returned to the States in which it was raised, and a large increase in the revenue of New South Wales resulted. As, however, new influences in Parliament had induced a more liberal policy in the Government, requiring an expanded revenue, the Land and Income Taxes, which had been imposed in 1896 to replace the remitted Customs Duties, were retained, and the total taxation imposed on the State rose from £1 18s. per head in 1898-9 to £3 0s. 6d. per head in 1903-4, practically the whole increase being due to the new tariff.

This increased rate of taxation was maintained in order to finance the Old Age Pensions scheme, which required £500,000 yearly, while equal sums were needed annually to pay the increases in interest charges on the public debt, and the State's share of the cost of Federal Government. The buoyant

condition of the revenue and the rapid improvement in trade encouraged a revival of the policy of developing the natural resources of the State, involving the expenditure of loan money on a large scale. A sudden expansion in the building of public works occurred, and in 1901-2 nearly £5,000,000 of borrowed money were disbursed by the Government.

This new policy produced a large increase in the public debt. By 1903 it amounted to nearly £77,000,000, a rise of £15,000,000 in four years; in the same period the annual amount of taxation (State and Federal) collected in the State increased from £2,500,000 to £4,500,000, while a long-standing deficit, approaching £3,000,000, continued undiminished.

Though this loan money was expended almost exclusively in railway building, and on other reproductive works, the policy pursued in regard to the public finances evoked loud protest, and led to the formation of a Taxpayers' Union early in 1902, to secure economy in expenditure.

Industrial development was now proceeding rapidly, and the Legislature had become occupied with an increasing volume of labour laws, among the most important of which were the Factories and Shops Act, 1896, and Employers' Liability Act, 1897, the Early Closing Act, 1899, the Truck Act, 1900, and the Industrial Arbitration Act, 1901, while a Workmen's Compensation Bill failed to pass in 1902. These measures, the first comprehensive attempts to regulate conditions of employment in New South Wales, were modelled usually on earlier legislation of other countries. But the local legislature was not lacking in initiative in dealing with the industrial problems that were steadily arising. General attention, seemingly, had concentrated on making statutory provision for the prevention and settlement of industrial disputes to the exclusion of other methods of improving industrial relationships, and the Act of 1901 was based on the bold Act passed in New Zealand in 1892. It introduced at one stroke most of the outstanding features of Industrial Arbitration as existent in New South Wales to-day. Its avowed aim was to prevent strikes and lockouts, to regulate effectively the working conditions of industry whenever a dispute arose, and to improve the status of the trade unions. It endeavoured to secure industrial peace by providing for judicial determinations between the claims of organised employers and employees.

Under the Act the machinery of the law could be set in motion, in respect of matters embraced in the Act, only by and through an Industrial Union or an employer. In this way a new and important status was given to unions whose growth was designedly fostered by the Act. Its advent was therefore opportune to the development of trade unionism.

Probably not more than sixty unions, with an indefinite number of members, had survived the trying period of the nineties. But, in 1901, the whole movement was galvanised into a new life by this system of arbitration, which enlarged the range of possibilities now attaching to combined action. The decline and the marked revival which occurred among unions are shown in the following statement of the number of new trade unions registered in periods of four years from 1888 to 1903:—

1888-91	...	...	...	...	84
1892-95	...	...	...	...	22
1896-99	...	...	...	...	4
1900-03	...	...	...	...	111

In addition, existing bodies gained members and recovered their lost vigour, and by the end of 1904 there were 152 active trade unions in existence with a total membership approaching 80,000. The force of the impulse expended its initial vigour by 1905, and a steadier and more persistent growth in the consolidation and expansion of existing unions proceeded in the next three

years. But in 1908 and 1909 the number and membership of trade unions again increased rapidly, and, at the close of 1909, there were in existence 166 trade unions, with a total membership of 127,000.

Though these associations consisted principally of employees, employers were not inactive. The Arbitration Act encouraged organisations among the controllers of industry, and between 1902 and 1907 the membership of employers' industrial unions rose from 2,302 to 3,329. The Employers' Federation was founded in 1903 with the objects of protecting and promoting legislation in the interests of employers and of encouraging amicable relations amongst employers, and between employers and employees. This body soon grew in power. At the same time many unregistered associations of employers and entrepreneurs sprang up, and the tendency to associate in business was an outstanding feature of these years. The associations formed were of two kinds—those formed to promote combined action in labour matters, which usually were registered, and those formed to facilitate an effective prosecution of business, which usually were not registered. After the year 1900, considerable activity existed in this latter respect, and, while many associations were formed for the promotion of common interests, apart from price-fixing, there continued in existence, or were newly established, price-controlling bodies in the following trades and industries:—Brickmaking, timber, coal, shipping, sugar-refining, jam-making, and tobacco, while, for a time at least, powerful interests were united in the wholesale meat industry. Thus the trust movement began to take hold of the industries of the State. At the same time the promotion of the joint-stock companies proceeded apace. Between 1901 and 1909 the number of limited liability companies making returns increased from 568 to 1,042.

Thus there grew up two highly organised parties to production, between which it was hoped the Arbitration Court would determine just conditions and so prevent excessive industrial strife. Time showed that the forces conjured up in this way grew beyond the control of authority, and that embittered industrial relationships resulted.

Power to direct that preference in employment be given to unionists was granted to the Courts, and around this clause of the Act, in common with others, were fought a number of strenuous legal battles, from which the Act emerged, according to a pronouncement by Mr. Justice Heydon, "riddled, shelled, broken fore and aft, and reduced to a sinking hulk," and the work of the Court was hampered and disorganised. The Act, however, was allowed to remain in force practically unamended until its expiry by effluxion of time in June, 1908, amid a serious outcrop of strikes.

Certain advocates of arbitration claimed that an attempt had been made to nullify the effectiveness of the Act by omitting to amend it as necessity arose. But in 1908 the prevailing discontent, the increase in the number of strikes, and the extent of the industrial trouble, were accepted by the Government as evidence that a complete change of system was necessary. To that end the Industrial Disputes Act was passed, introducing a new scheme on the pattern of the Wages Boards of Victoria, the outstanding feature of which had been the settlement of disputes at "round-table" conferences. The scope of the new system was very wide, and aimed not only to provide for the prompt settlement of disputes, but to afford means for the determination of any industrial matter with a minimum of legislation and formality. Though, in practice, the Wages Boards adopted legal procedure, the new system actually accorded to the employees the long-sought right of appeal to independent tribunals for complete regulation of their conditions of employment.

The advent of arbitration did not produce at once any general rise in wages, and, except for employees in the lower-paid callings, no appreciable monetary benefits were reaped until the application of the living wage

principle in 1906, and of the "Harvester" wage of 1907. A rise in the cost of living, a growth of industrial dislocations, and a revision of the system of arbitration all occurred before any very general advance in wages. This may be seen by reference to the average rates of wages in all trades in New South Wales at the end of respective years. These were as follow :—

Year.	Average Wage per week.		Year.	Average Wage per week.	
	s.	d.		s.	d.
1901	43	11	1906	45	4
1902	44	8	1907	46	7
1903	44	9	1908	46	9
1904	44	9	1909	48	3
1905	44	7	1910	49	7

The course of wages in representative callings, and in relation to the cost of living is shown in the following statement :—

Trade or Calling.		1896.	1901.	1906.	1909.
		s. d.	s. d.	s. d.	s. d.
<i>Manufacturing—</i>					
Boot Clickers	per week	35 0	45 0	45 0	48 0
Tailors (Journeymen)	"	40 0	50 0	50 0	55 0
Boilermakers	"	60 0	60 0	60 0	60 0
Moulders (Iron)	"	60 0	60 0	60 0	60 0
Fitters and Turners	"	60 0	60 0	60 0	64 0
Coppersmiths	"	60 0	60 0	60 0	68 0
Electrical Fitters	"	60 0	60 0	60 0	60 0
Labourers (Iron Trades)	"	...	42 0	42 0	45 0
<i>Building, etc.—</i>					
Carpenters	per week	48 0	60 0	60 0	60 0
Bricklayers	"	54 0	60 0	62 0	66 0
Stone-masons	"	54 0	60 0	66 0	66 0
Plasterers	"	42 0	51 0	54 0	57 0
Painters	"	42 0	54 0	55 0	60 0
Bricklayers' Labourers	"	36 0	42 0	42 0	42 0
<i>Rural Industries—</i>					
Boundary-riders	per week, with keep	20 0	20 0	25 0	25 0
Farm Labourers	"	12 6	16 3	25 0	25 0
Milkers	"	14 0	15 0	16 3	21 0
Shearers	per 100 sheep shorn	20 0	20 0	20 0	24 0
<i>Mining—</i>					
Coal Miners	per ton (best coal)	2 11	4 2	3 6	4 2
Coal Wheelers	per week	36 0	42 0	38 0	42 0
Silver Miners	"	...	54 0	60 9	60 0
„ Mine Labourers	"	...	45 0	50 6	51 9
<i>Females, with Board and Lodging—</i>					
General Servants	"	11 6	11 0	15 0	15 0
Cooks	"	14 0	20 0	17 0	21 0
Index Nos., Year 1911 = 1000.					
Nominal Wage (Adult Males)	...	819	854	882	938
Effective Wage (Adult Males)	...	1057	1007	979	983
Cost of Living (Food and Rent)	...	775	848	801	954

In the earliest decisions of the Arbitration Court the condition of the industry was the principal factor considered in making awards, but a new and important principle of wage-determination was introduced on the advent of Mr. Justice Heydon to the Presidency of the Court of Industrial Arbitration in 1905. A pronouncement was made in favour of fixing

wages by reference to the cost of living. This new principle was established definitely in 1907 through a provision of the Commonwealth Parliament that an excise duty should be imposed on agricultural machinery manufactured in Australia, but remitted where the remuneration of labour was "fair and reasonable" as determined by certain authorities. The question as to what was "fair and reasonable" came for determination before Mr. Justice Higgins, President of the Commonwealth Arbitration Court, with respect to Victorian conditions. The test which he applied in the case of unskilled labourers was involved in the question: What wage would suffice to meet "the normal needs of an average employee regarded as a human being living in a civilised community?" On this principle he fixed the fair and reasonable wage for an unskilled labourer at the sum of 7s. per day, assuming an average family of "about five" persons. This rate was known afterwards throughout Australia as the "Harvester Wage."

Although an adverse decision as to the legality of the provisions of that portion of the Act which authorised this investigation was made shortly afterwards, the rate of seven shillings per day determined upon as a minimum was adopted by the arbitration tribunals of this State as the basis of their awards, and payment was in some measure adjusted to needs, while a standard living wage, that is, a wage based on the reasonable requirements of an assumed average family, was ultimately adopted. Previously, though unskilled labourers usually had been awarded seven shillings per day, in some other unskilled occupations smaller sums had on occasions been awarded. But these callings now generally benefited, as the new basis came to be adopted in future awards.

The general tendency in wage-adjustment was towards a levelling-up of rates by the improvement of the position of skilled but low-paid workers, *e.g.*, the tailors and boot-clickers obtained in the eight years following the introduction of industrial arbitration increases of approximately 30 per cent., while the wages of iron-moulders, carpenters and boilermakers, who, in 1901, were all more highly paid, remained stationary.

Remedy was applied by special enactment to undesirable practices which had grown up in the employment of women and young persons in dress-making and millinery in certain factories and shops. An official return\* of the employees in dressmaking and millinery workrooms in the Metropolitan area showed that 137 females, employed nominally as apprentices, received no pay at all, 38 received less than 2s. 6d. per week, and 365 received from 2s. 6d. to 3s. 6d. per week, while in the Newcastle district conditions were even worse. The Minimum Wage Act, 1908, provided that no person within the definition of "workman" or "shop-assistant" should be employed at a wage of less than 4s. per week.

Thus the operations of the Arbitration Court tended to increase nominal wages without leading to any marked rise in effective wages, but it did much to enforce generally the conditions which the unions had sought vainly to secure under less favourable circumstances. The minimum standard was raised, the proportion of apprentices was regulated, and the standard week of forty-eight hours became more widely recognised. The new activity in spheres of arbitration seemed to engross the attention of the unions, and, for some years, very few strikes occurred. But the machinery provided for arbitration was defective. Its bad working sorely tried the patience, even of well-intentioned applicants, and as the cost of living rose the number and extent of strikes began to increase. In 1904, seven small dislocations of industry occurred; in the following year the number probably exceeded twenty, including an important strike of wheelers in the Newcastle district.

\* N.S.W. *Hansard*, 8th October, 1908, p. 1538.

Small disputes continued throughout 1906, but the year 1907 witnessed an increase both in the number and magnitude of dislocations.

The coal trade was frequently disturbed by small disputes, until the general discontent at arbitration delays involved the northern fields in a general strike, lasting eleven days, in November, 1907. This was the first of a series of large disturbances which have occurred so frequently since in this vital industry.

It was becoming increasingly apparent by 1908 that the limited scope of the Arbitration Court and the vexatious delays imposed on its applicants had availed only to defer trouble in industry, and that delay or failure in obtaining awards was acting as a powerful irritant to the unions, which began to adopt the strike as a method of gaining access to the Court, or of directly attaining their ends.

Stringent penalties against striking were provided by the Industrial Disputes Act of 1908, which constituted the new system of arbitration, but industrial peace was not secured, and the slight deterrent effects of the prohibition against striking are apparent from the following table and from similar figures for later years, showing the extent of and the amount of wages lost in strikes:—

Year.	Non-mining Industries.			Mining Industries.		
	Number of Dislocations.	Number of Working Days Lost.	Estimated Loss of Wages.	Number of Dislocations.	Number of Working Days Lost.	Estimated Loss of Wages.
			£			£
*1907	11	712	...	30	204,966	...
1908	51	106,683	43,000	130	130,746	59,600
1909	43	47,047	17,300	85	1,969,920	923,400

\* July to December.

The dislocations of 1909 included a strike of 2,500 metalliferous miners at Broken Hill against a reduction of wages in accordance with a fall in the price of metals. Towards the end of the same year the discontent in the coal trade culminated in a great strike on all the coal-fields of the State, and 20,000 coal-miners were involved in a stoppage which lasted four months, and ended by a reference of the miners' claims to arbitration. In all, as a result of strikes occurring in 1909, a total of 2,117,000 working days were lost in New South Wales, and this total was not exceeded until 1917.

While these portentous developments were proceeding a remarkable period of prosperity was opening.

Trade and commerce had reached their lowest ebb in New South Wales by 1896, although the pastoral industry continued to sink under the weight of successive adverse seasons to its lowest point in 1902, when bad times definitely ended.

A complete and favourable change had taken place in the condition of the State's overseas trade. The total value of exports had increased steadily after 1886, when it was £5,700,000 less than imports, to a point where in 1894 it was £4,700,000 in excess of imports. An inter-action then occurred; imports increased until 1901, when there was considerable loading-up in anticipation of the new Federal Tariff, and imports and exports were almost equal in value. In the succession of prosperous seasons which ensued, a marked growth in the export trade left considerable balances in favour of the State. The extent of the remarkable recovery which was made in the period 1901 to 1910

from the depression due to the bad conditions preceding and following 1893 may be judged from the following table:—

Period.	Average Annual Value of Oversea Trade of New South Wales (000 omitted).		Average Annual Excess of Exports (000 omitted).	Average Annual Loan Expenditure by Government (000 omitted).
	Imports.	Exports.		
	£	£	£	£
1885-89	13,514	10,624	(-) 2,890	2,634
1895-99	12,234	16,986	4,752	1,766
1900-04	15,419	18,880	3,461	3,259
1905-09	18,733	28,265	9,532	2,116

(-) Excess of Imports.

The deductions to be drawn from this table are modified by the facts that considerable sums of capital were imported privately from abroad between 1885 and 1889, and that considerable sums were also withdrawn by foreign investors after 1895. The general effect of the loan expenditure by the Government was to put into circulation considerable sums of money imported from abroad, and in this way to heighten the prosperity which had resulted from the flourishing condition of the export trade.

A small proportion of the trade balances was due to the increasing popularity of Sydney as a port of transshipment, since a growing volume of merchandise from other States was finding its way thither as a convenient outlet. In the last period, shown above, the average exports of New South Wales produce—oversea and interstate—amounted to £32,779,000.

These favourable developments in the external trade of New South Wales were not without effect on the domestic financial situation. With the improvement in trade, which came toward 1900, the banks steadily won their way back to stability. The withdrawal of foreign banking capital from Australia had proceeded for nine years without intermission, and the amount of British capital invested in Australasian Joint Stock companies continued to diminish until 1908, although the withdrawals were more than made good by investments of local money. Between 1901 and 1912 the proportion of Australasian capital invested in local joint-stock companies increased from 45 per cent. to 64 per cent. of the total.\*

Bank deposits had maintained regular increases since 1896, while advances declined from the unhealthy position which they had occupied prior to the crisis, until, in 1904, for the first time since 1880, they were actually less than deposits, and in this position they remained. The proportion per cent. of bank advances to deposits during each year of this period was:—

1901	...	...	105.4	1906	...	...	87.3
1902	...	...	104.8	1907	...	...	87.1
1903	...	...	106.5	1908	...	...	89.5
1904	...	...	98.6	1909	...	...	83.4
1905	...	...	87.5				

The net profits, as reported,\* of joint stock companies operating in Australasia, showed from 1899 onwards a persistent increase, both in the aggregate and in ratio to the paid-up capital, and bank clearances in Sydney expanded by 75 per cent. in the ten years ended 1904. The great improvement in business conditions is shown by the fact that, after the year 1900,

\* Nash: "Australasian Joint Stock Companies' Year Book, 1913-14."



bankruptcies became fewer, and less serious. These facts appear from the following table:—

Heading.	1894.	1901.	1904.	1907.	1909.
Trading Banks—					
Deposits ... .. £ (millions)	29·8	33·3	33·3	42·8	46·1
Advances ... .. „	37·4	35·1	32·8	37·2	38·5
Clearances ... .. „	101·2*	167·7	177·8	234·2	240·6
Savings Banks—					
Depositors ... .. No. (thousands)	190	306	350	422	460
Deposits ... .. £ (millions)	7·2	11·8	13·2	17·5	20·2
Limited Liability Companies—					
Number making returns ... ..	†	568	648	903	1,042
Number formed annually ... ..	90	88	127	180	251
Nominal Capital ... .. £ (millions)	†	1·8	2·8	3·8	6·8
Bankruptcies—					
Sequestrations ... .. No.	1,465	438	461	333	366
Deficiencies ... .. £ (thousands)	856	104	188	67	86

\* From 18th January.

† Not available.

With this improvement came a revival in investment. The bank rate of interest for fixed deposits for twelve months had been reduced from 5 per cent. in 1892 to 3 per cent. in 1896, where it remained until 1903, when a rise of  $\frac{1}{2}$  per cent. occurred.

The steady withdrawal of English capital from local investments and the consequent difficulty in negotiating loans abroad, induced the Government and corporations to make moderate loan issues on the local market, which was already feeling the pressure of an expansion in trade. This growth of private investment and of public borrowing had the effect of hardening what for years had been an easy money market, so that in August, 1901, the State was obliged to raise its rate of interest on funded stock to  $3\frac{1}{2}$  per cent. Though the primary industries and the export trade had flourished since 1899, several causes were operating to raise the value of money still further; investment proceeded, British capital remained timid, and the bad season of 1902 resulted in less fresh capital being available for investment.

Thus, early in 1903, a rise in the minimum mortgage rate from 4 to  $4\frac{1}{2}$  per cent. occurred, and local issues of Government loans could obtain little better than par for 4 per cent., while borrowing on the English market again became difficult. The benefit of the purging which the State had experienced in 1893 and subsequent years now began to manifest itself in a distinct movement towards development from within. The commerce and industry of the State, instead of being dependent for stability, as it had been in the eighties, on the injudicious introduction of large amounts of borrowed capital, both public and private, tended, for a time, to find a surer support in the accumulations which resulted from the high productive activity of the community, favoured by the succession of good seasons which were now being experienced.

During the nineties, the occurrence of unfavourable pastoral seasons had synchronised with low prices, and had depressed the wool industry, and through it, the general prosperity of the State.

The value of wool had fallen almost continuously over a period of thirty years, inasmuch as the average prices per pound realised for greasy wool in London during the three decades were:—

1871-80	...	...	...	d.
1881-90	...	...	...	11·1
1891-1900	...	...	...	9·4
				8·6

A sudden boom occurred in wool in 1899, and prices reached record heights. Though this boom subsided quickly, the rapidly growing demand for wool permanently changed the direction of the price tendency, and a succession of good seasons, almost unbroken for ten years, were the principal contributing sources of a markedly increased production of wealth, which was the outstanding characteristic of the years which followed 1902.

The extent of the revival in the wool-trade is clear from the following table:—

Year.	Number of Sheep.	Production of Wool.	
		Weight.	Value.
	(millions)	lb. (millions)	£ (millions)
1897	43·9	303·3	8·1
1902	26·6	217·4	7·4
1907	44·5	367·4	17·2

With this great advance wool maintained its important place among the factors governing the prosperity of the State. But though it remained dominant, a considerable alteration took place in the nature of the export trade, and minerals, wheat, butter, and meat now exerted a favourable influence on the trade balance and gave to the prosperity of the State a broader foundation. The values per head of the principal articles exported oversea, at intervals during the period, were as follow:—

Articles.	1896.	1900.	1905.	1909.
	s. d.	s. d.	s. d.	s. d.
Wool ... ..	117 2	94 0	153 2	154 9
Meat ... ..	8 10	11 4	13 3	14 8
Wheat and Flour ...	0 6	3 9	14 0	11 9
Butter... ..	1 3	6 5	9 11	9 10
Silver and Lead ...	27 11	38 3	25 10	12 2
Coal and Coke ...	7 4	9 4	10 11	10 11
Copper ... ..	3 2	7 4	17 0	14 3

The severe drought of 1902 had a disastrous effect on the primary industries, and consummated the series of misfortunes which had beset the State since 1893. The wheat yield reached only one and a half million bushels, and, to meet local requirements, it became necessary to import wheat and flour from abroad on a large scale, so that wheat at 6s. 3d. per bushel was at a higher price than for twenty-six years. At the same time the absence of wheat for export and the losses of sheep caused a considerable decrease in the total value of the State's exports. To assist the farmers who had lost heavily in the drought, the Government in 1903 acquired and distributed large quantities of seed-wheat.

The heavy yield of wheat in the new season—a yield almost as large as in any two previous years combined—at once made good the losses sustained, and demonstrated that the new industry was established on a sure foundation. The pastoral industry made a slower but none the less remarkable recovery, and, within three seasons, the flocks of the State increased by fifty per cent., while the production of wool showed an even larger proportionate expansion. In the dairying industry a similar improvement appeared, and, since a revival in the prices of metals early in 1903 had stimulated the mining industry, a long period of general prosperity in the primary industries was

flushed in. The extent of this improvement may be gauged by a consideration of the value of production per head of population at intervals during the period.

Industry.	1901.	1906.	1910.
	£ s. d.	£ s. d.	£ s. d.
Pastoral ... ..	9 2 1	13 5 6	13 0 3
Agricultural ... ..	5 3 3	5 1 3	5 17 6
Dairying and Farmyard ...	2 6 8	3 0 9	3 14 4
Mining ... ..	4 3 1	5 6 7	5 4 8
Manufacturing ... ..	7 2 6	8 0 5	10 7 9
All Industries ...	28 12 0	36 1 0	39 15 7

The great economic changes which had come over the Old World did not manifest themselves in industry in New South Wales until toward the end of the nineteenth century, when a transformation had been wrought in the condition of the community. Manufactories developed rapidly, and, while the population increased in all divisions, the rate of growth was faster in the towns than in the country. From 1881 onwards the disparity between urban and rural population had grown in a remarkable manner, and the centre of gravity of the population had moved from rural to urban centres.

The full importance of this fundamental change in the distribution of population is difficult to gauge, but a consideration of its numerical effects is instructive. This is afforded by the following table, which shows the distribution of population and employment at the Census periods from 1891 to 1911:—

Division.	1891.	1901.	1911.
Urban Population ... ..	740,151	933,394	1,227,297
Rural ... ..	378,099	413,326	411,281
Industrial Workers ... ..	136,817	146,688	208,014
Primary Producers (excluding Miners) ...	116,027	134,472	164,519

The development of secondary to the exclusion of primary industries and the growth of urban settlement at the expense of rural development was as yet only beginning. Though immigration revived between 1901 and 1911 the net gain from migration did not exceed 42,000 and the distribution of population did not improve. Again, nine of the fourteen divisions of the State lost population, principally to the metropolitan districts, which gained more than 68,000 inhabitants. The only marked growth of rural settlement occurred in the rich lands of the North Coast, where 17,000 inhabitants were gained by migration.

As the State developed, pressure on its primary resources increased, and the fact that a very considerable proportion of the good lands were already alienated in large holdings proved a formidable obstacle to rural expansion. As new forces arose in politics, this question of land settlement received increasing attention at the hands of the Legislature. The virtual failure of the Acts of 1861, 1884, and 1889 to promote close settlement, and to prevent the further accretion of large estates, had been brought about largely by the practice of "dummying," and by a profitable traffic in land, carried on in part by the persons whom the Acts were designed to benefit.

The continued flow of population toward the towns and cities rendered the task of establishing a large population on the extensive areas of under-populated land more and more difficult, while it increased its urgency. An

Act of 1895 had introduced into land settlement some new principles whose operation was beneficial, but it did not provide a solution of the problem. The grant of homestead selections and of settlement leases, and the imposition of a residential condition on conditional purchases of land, however, had the effect of stimulating some fresh and permanent settlement, and of restricting land speculation, which had developed into a recognised evil.

New elements were entering into the land question. The extension of wheat-growing, made possible largely by the discoveries of the foremost agricultural experimentalist of the State, William Farrer; the rise of the dairying industry, stimulated by the entry of local products to markets over-sea; and the introduction of dry-farming, and of irrigation methods, made possible a large expansion in the primary industries of the State, and rendered the matter of land settlement and utilisation more urgent and more complex.

Effective land settlement involved four things—that plenty of suitable land should be available, that settlers with small means should be assisted financially, that excessive alienation, which had always tended to swell large estates, should be prevented, and that rural life should be rendered more attractive.

The problem was attacked in a new way in 1901 through the Closer Settlement Act, which empowered the Minister for Lands to acquire private lands or Crown leases offered for sale, and to subdivide and dispose of such lands in small lots on a leasehold tenure. The power of compulsory acquisition was not bestowed and the Act remained practically inoperative. It was repealed in 1904 by a more thorough-going measure containing provision for compulsory resumption of private lands and for disposal of them in smaller lots, but not necessarily on a leasehold basis.

In 1899 steps had been taken by the sale of inscribed stock to provide a fund from which the State might make advances of money on terms advantageous to settlers in need of assistance. The maximum amount which might be granted to any one settler was raised to £1,500 in 1902. Considerable use was made of this scheme, and in the next six years nearly one thousand advances, on the average, were made annually.

Reconsideration was also given to the condition of the occupiers of land in the less-favoured Western Division, who, it was felt, required generous treatment in view of the especial difficulties confronting them. The administration of these lands was placed under a separate authority, and a lease tenure of forty years' duration granted at a low annual rental, based on the carrying capacity of the land.

The policy of the Government elected in 1904, tended to favour rural development, and its comprehensive legislative programme included a range of land measures and amendments, local government extension, the construction of Burren Juck dam and the Murrumbidgee Irrigation Area, while the policy of assisted immigration, which had been dormant for twenty years, was revived in 1905. Under this scheme nearly 41,000 immigrants were introduced in the next seven years. The legislation of the Commonwealth had already put an end to the introduction of coloured labour from the islands of the Pacific, and had prevented effectively the further influx of Asiatics. The protection of Australian industries was also a matter of Federal activity, and although the tariff of 1908 led to a large increase in the amount of indirect taxation by the imposition of heavier import duties, yet it proved a benefit to Australian secondary industries, which were assisted further by the grant of bounties on production. The first large iron works in the State were established at Lithgow in 1907.

The manufacturing industry had entered on a period of progress in 1903, which accelerated after 1905. In the nine years ended 1909 more than four

million pounds worth of new plant was introduced, 25,000 additional hands were employed, and the value of the output increased by nine-and-a-half million pounds, or by nearly 100 per cent. This rapid expansion occurred chiefly in the textile, metal, and printing trades, and was, therefore, a genuine extension of manufactories proper, rather than a mere enlargement of existing processes. The development is apparent from the following figures of the manufacturing industry :—

Year.	Number of Establishments.	Value of Plant.	Number Employed.	Value of Output.	Value added to Raw Material.
		£		£	£
1901 ...	3,367	5,861,000	66,230	24,395,000	9,742,000
1905 ...	3,700	8,032,000	72,175	27,850,000	10,631,000
1909 ...	4,581	10,331,000	91,702	40,242,000	14,536,000

Prosperity, however, was not confined to the factories. Splendid seasons had facilitated a speedy improvement in the primary industries after 1902, and the beneficial effects of a rapidly-growing production were emphasised by a steady advance in market prices for wool and metals. The adverse season of 1907 was not severe enough to interfere materially with the general progress, although, concurrently with the restricted output of pastoral and agricultural products, the world market for wool and metals again fell off appreciably during 1908 and 1909, as a result of the American financial crisis of 1907.

The variations in production and prices of four of the principal local products were as follow :—

	1901.	1905.	1910.
<b>Production—</b>			
Wool ... .. lb. (millions)	310·1	297·1	415·3
Wheat ... .. bush. (millions)	14·8	20·7	27·9
Butter ... .. lb. (millions)	39·1	53·0	76·6
Coal ... .. ton (millions)	6·0	6·6	8·2
<b>Prices—</b>			
Wool, Greasy ( <i>Import Value, United Kingdom</i> ) ... .. per lb.	s. d. 0 8·3	s. d. 0 10·2	s. d. 0 10·1
Wheat ( <i>Sydney, February</i> ) ... .. per bush.	2 7	3 4½	4 1¾
Butter ( <i>Sydney, Wholesale average</i> ) ... .. per lb.	0 10·6	0 10·2	0 11
Coal, Best ( <i>Sydney, Wholesale average</i> ) ... .. per ton	11 9	13 0	13 8

These developments encouraged a condition of trade highly favourable to the State. Between 1902 and 1909 the volume of shipping entered and cleared at New South Wales ports increased by nearly 50 per cent., exports oversea more than doubled, while imports grew by only 33 per cent. For nine successive years a large excess of exports over imports, amounting in all to a value of seventy-five million pounds sterling, was shown. Coupled with a policy of strict economy in Government expenditure, these factors soon produced signs of a large accumulation of money in the State, and, in the absence of heavy investment, produced a condition of monetary ease early in 1905 which lasted until 1908. In April, 1906, the bank rate for fixed

deposits for one year was again reduced to 3 per cent., where it remained until 1912. The volume of business transacted by the banks grew rapidly, while at the same time a rapid increase occurred in the gold reserves, the amount of which, and the proportion to total liabilities to the public, are shown below :—

Year.	Gold Reserves of Banks.	Proportion of Gold Reserves to total Liabilities of Banks.
	£ (millions).	per cent.
1890	5·7	15·4
1900	6·1	18·0
1910	13·0	24·8

Prices of raw materials and manufactured goods rose almost continuously after 1899 in the world's markets. There grew up an urgent demand for gold, and the question of the adequacy of gold reserves and coinage facilities assumed a new and more important phase. Under the stimulus of trade the currency expanded rapidly, stocks of gold accumulated in the banks, issues of coin were enlarged, and the paper currency expanded. The growth of active currency between 1901 and 1911 is shown below :—

Nature of Currency.	1901.	1906.	1911.
	£ (thousands).	£ (thousands).	£ (thousands).
Metallic ... ..	2,385	2,536	3,212
Paper ... ..	1,500	1,462	2,143
Total ... ..	3,885	3,998	5,355
Per head of Population	£2 16 5	£2 13 4	£3 4 4

In America the financial crisis of 1907 was followed by a short period of stagnation, which induced a temporary fall in the prices of the important staples of the world, including wool and metals, for, of the industrial metals, the United States at this time consumed 44 per cent. of the world's output. In London, Government stocks suffered a further heavy decline, from which they did not recover completely, and increased interest charges on new loans ultimately resulted. The depreciation in stocks may briefly be indicated thus (the quotations are as at July of each year) :—

	1896.	1902.	1907.	1909.
	(Highest Point.)	(Close of Boer War.)	(American Crisis.)	
Consols (2½ per cent.) ...	112½	95½	82½	84½
New South Wales Stocks (3 per cent.) ... ..	103	94½	87	88

The new growth of trade did not affect at once the general level of prices locally, but the improved markets for Australian produce abroad brought into being the conditions necessary to permit a rise in prices, viz., prosperity and demand. These factors operated fitfully in the first decade of the century, always tending to inflate prices, but not causing any sudden

advances such as those which later characterised the war period. It was not until 1906 that the new trend began to assume definite direction, and that the subject of prices assumed a place of leading importance in the economy of the day. That year was described as one of "high average cost of commodities," and discussion arose as to whether a new and higher range of values was being established. To this speculation point was added by the fact that almost every nation of the world was participating in an extraordinary prosperity, while unprecedented industrial activity existed.

New South Wales had recovered but slowly from the financial and industrial upheavals of the early nineties. When the change set in, however, it proceeded rapidly, especially after 1905, when the bad effects of the severe drought of 1902 had worn off. The volume of production in relation to population rose steadily, and reached its highest point in 1910. In this increasing production of wealth lay the keynote of the prosperity of the times, for the value of production to the producers expanded, on the whole, little faster than the productive activity, and prosperity was not due, as in later years, to any rapid rise in prices. These conclusions are apparent from the following table of index numbers which show the relative value and volume of production in various years :—

Year.	Value of Production per head. Index Numbers (1911=1000).			Volume of Production per head.* Index Numbers (1911=1000).		
	Primary Industries.	Manufacturing Industry.	All Industries.	Primary Industries.	Manufacturing Industry.	All Industries.
1901	755	620	716	820	686	781
1903	794	593	737	823	569	750
1905	874	636	806	873	681	818
1907	1060	772	977	939	772	891
1910	1034	904	996	1079	907	1029

In addition to this rise of prosperity, other factors, such as general world prosperity, the development of trade unions, and the change in the employment and distribution of the population of New South Wales, were operating to bring about a change in the bases of prices and wages. The effects were not marked at first, but toward the close of this period they began to assume aspects of great importance.

The effects of the altered conditions were first felt in a rise in the prices realised for durable merchandise—manufactured goods, and the raw materials which composed them—while articles destined for direct consumption showed only seasonal variations. This condition was, on the whole, highly favourable to local trade, which depended largely on the prices realised for exports of raw materials. The increases were somewhat greater in raw materials than in manufactured goods, and for this reason the prices of Australian produce rose more than those of goods which were imported. Considered from the standpoint of consumption in New South Wales, the increases in wholesale prices after 1901 are shown in the following table of index numbers, 1911 being the basic year, and represented by 1000 :—

Commodities.	1901.	1905.	1909.
Australian ... ..	903	945	1045
Imported ... ..	906	910	955
All Commodities ...	904	933	1014

\* The term "volume of production per head," or "relative productive activity," signifies the quantity of production per head of population in each year. It is ascertained by dividing the actual value of production by the production price index numbers of the year, and relating the quotient to the population. (See chapter "Employment and Production").

An upward movement had also begun locally in 1899 in the retail prices of foodstuffs and in rents, so that some importance now began to attach to considerations of the cost of living. This may be seen from a statement of the retail prices of the more important articles of food and the average rent paid in Sydney in representative years :—

Commodity.	1899.	1901.	1903.	1907.	1909.
	s. d.	s. d.	s. d.	s. d.	s. d.
Bread, 2-lb. loaf ...	0 3	0 2½	0 3½	0 3	0 3½
Beef ... ..per lb.	0 3½	0 5	0 5½	0 5½	0 5½
Butter... ..,,	1 0	1 0	1 2	1 1	1 2½
Sugar ... ..,,	0 2½	0 2½	0 2½	0 2½	0 2½
Tea ... ..,,	1 6	1 3	1 3	1 3	1 3
Milk ... ..per qt.	0 4	0 4	0 4½	0 4½	0 4½
House Rent— 5 rooms ...per wk.	12 6	13 7	13 8	14 8	14 10

Thus the prosperity of trade was accompanied by an increase in the cost of the necessaries of life, which slowly and inevitably depreciated the purchasing power of wages, so that a new and more compelling force tending to raise nominal wages was now added to the desire to improve the standard of life, which had previously animated unionism in its efforts to secure concessions.

The period of progress and prosperity which had resulted from the excellent seasons and the trade revival of the past ten years, and had done so much to restore the State to a sound position, reached its greatest intensity by 1910. Accumulation of resources proceeded rapidly, bank deposits expanded, and private wealth grew by leaps and bounds. Between 1901 and 1911 the value of permanent improvements to land increased by £161,259,000, or 106 per cent.; the value of flocks and herds by £10,620,000, or 31 per cent.; of industrial machinery, mining properties, and shipping by £12,870,000, or 65 per cent.; and of household and personal effects by £16,178,000, or 105 per cent. In all, the total increase was £185,247,000, or 50 per cent. The average amount of all wealth per head of population grew from £395 to £466. Property was becoming more widely distributed, wages were high and prices comparatively low, while production was expanding. A rapid growth in company promotion was proceeding, and trade and industry were active. There apparently existed in the situation all the factors necessary to continued prosperity.

#### 1910-1914.

The flourishing conditions existing in the past five years, however, led to a reaction against the spirit of those years and to an abandonment of the policy of economy. Large sums of money were spent on public works, a number of State industrial undertakings were opened, many new public companies floated required much capital, and, in the Federal sphere, the navy, the army, and the old-age pension scheme absorbed more and more money. In the previous period the volume of production per head had expanded rapidly as the effects of the drought of 1902 wore off. Primary production attained its greatest intensity in 1910, and the manufacturing industry in 1913. Thereafter, both industries lost vitality, and later, during the war, a heavy



fall occurred in the relative productive activity of the community. The exhaustion of the beneficial forces hitherto operating was shown further by the fact that the margin of exports over imports had diminished rapidly, and practically vanished by 1911, and in the present period the series of good seasons which began in 1903 were replaced by a succession less propitious. But though the fundamental forces necessary to a continued prosperity were failing, there was no serious decline in productive activity until drought and war combined in 1914-15.

The decline in production which ensued was, in a measure, presaged by the trend of events in the period at present under review, which closed amid all the difficulties consequent on the outbreak of war, and the immediate depression of a severe drought. Pastoral production manifested signs of decline, but a shrinkage of the national income was averted by an improvement in the market for metals in 1912, an expansion of the manufacturing and agricultural industries, and a recovery in the wool market. Expenditure, however, tended to grow faster than income, and this period, reaping the benefit of the previous good seasons, showed a greater apparent prosperity than its true basis in production warranted.

This apparent prosperity was due more to a rise in prices—which supported a steady increase in monetary wages—than to any other single factor; and prices henceforth played a very large part in raising from year to year the value of production. Although it is rather on the value than on the volume of production that prosperity depends, this value is itself dependent upon the quantity of production. When the volume of production shrinks, prosperity is left dependent on the caprice of markets and maintains a precarious existence. These factors are considered in the following table:—

Year.	Value of Production per head. Index Numbers, 1911=1000.			Volume of Production per head. Index Numbers, 1911=1000.		
	Primary Industries.	Manufacturing Industry.	All Industries.	Primary Industries.	Manufacturing Industry.	All Industries.
1910	1034	904	996	1079	907	1029
1911	1000	1000	1000	1000	1000	1000
1912	1049	1129	1070	985	992	987
1913	1053	1123	1073	984	1028	996

The rapid extension in the construction of public works in the State, which had begun in 1909, was continued, and the expansive policy was marked in December, 1910, by the authorisation by Parliament of loans amounting to nearly £5,000,000, including large sums for railway construction, closer settlement, water and sewerage services, and harbour improvements. Railway operations extended to the duplication of existing trunk lines, the construction of the North Coast line, and of a number of shorter lines in the more settled parts of the State.

Throughout the period the loan expenditure by the Government grew rapidly, and perhaps this was opportune for the State. While the value of exports remained stationary, though at a much higher level than it had ever before maintained, the value of imports rose rapidly, until in 1914 it considerably exceeded that of exports. The growth of governmental expenditure now provided some of the means whereby that large circulation of money, formerly due to the flourishing condition of the oversea trade, was maintained, and did much to ward off the danger of a collapse in local prosperity, although it did not prevent a certain hardening in the local money

market in 1912. An interesting comparison reflecting the extent of these influences may be made thus :—

Year.	Value of—			Expenditure of Loan Money by Government.
	Imports.	Exports.	Excess of Exports.	Year beginning 1st July.
	£ (million).	£ (million).	£ (million).	£ (million).
1910	23·2	32·0	8·8	3·9
1911	27·3	32·2	4·9	5·5
1912	32·3	33·0	·7	7·7
1913	32·4	32·8	·4	9·1
1914	31·5	29·0	(—) 2·5	7·0

(—) Excess of imports.

The exports in 1911 and 1912 each included an approximate value of three million pounds in gold, bullion, and specie, and the decline in exports in 1914 was due to the combined effects of drought and war. The rapid increase in imports was due mainly to a greater demand for materials needed in the new growth of commercial development, and resulted largely from increased importation of machinery, implements, vehicles, building materials, metals, mineral oils, chemicals, and other manufactures, although large increases occurred also in dress, tobacco, and drink. Two main causes operated to prevent a further expansion in the value of the State's exports overseas. The steady diminution in the flocks of sheep, which had set in after 1909, resulted in 1911 and the ensuing years in a decline in the production of wool, while a heavy fall in metal values in 1908 had led to a practical cessation of export, which was not resumed until prices rose in 1912. The largely-increased production of wheat was counteracted to some extent by a fall in values below that of the closing years of the preceding period.

Though the productive activity of the community did not show any further improvement after 1910, it continued on a high plane until 1913, and many of the outward signs of increasing prosperity in the community continued. A large increase in bank advances took place, but an expansion almost as great occurred in deposits, which still continued on a satisfactory scale. Again, the volume of business transacted, as measured by clearances, showed rapid expansion, and a remarkable outburst of business activity was made evident from the formation of many new limited companies. That this prosperity was general in the community is apparent from the savings bank returns, which may be considered to reflect the prosperity of the wage-earning classes of the State. The development may be indicated in the following general way :—

	1910.	1912.	1914.
<b>Trading Banks—</b>			
Deposits ... .. £ (millions)	51·9	57·2	62·0
Advances ... .. „	40·8	47·7	51·8
Clearances ... .. „	274·3	330·6	353·1
<b>Savings Banks—</b>			
Depositors ... .. No. (thousands)	478	577	718
Deposits ... .. £ (millions)	20·8	26·5	33·2
<b>Limited Liability Companies—</b>			
Number making returns ... ..	1,218	1,550	2,283
Number formed during year ... ..	329	432	354
Nominal Capital of new Companies £ (millions)	7·0	13·9	7·4
<b>Bankruptcies—</b>			
Sequestrations ... .. No.	325	359	375
Deficiencies ... .. £ (thousands)	57	57	182

The growing industrial and commercial activity, coupled with the occurrence of a drought in New South Wales in 1912, caused an appreciable growth in the demand for money, and an increase in interest rates. The bank rate for fixed deposits for twelve months was raised from 3 to  $3\frac{1}{2}$  per cent. early in 1912; the Government Savings Bank rate was raised to  $3\frac{1}{2}$  per cent. some months later; and a 4 per cent. loan was raised by the Government of New South Wales in London at  $99\frac{1}{2}$ , and followed by another at 98 in 1913, and still another at 96 in January, 1914, just before a favourable change in the market in February. Local investments in Government stocks yielded corresponding returns. Some measure of the general rise in interest rates may be made from a consideration of the depreciation of Government stocks. The following London quotations are typical of the general decline in gilt-edged securities:—

	July, 1910.	July, 1912.	July 23, 1914.
Consols ( $2\frac{1}{2}$ per cent.) ...	81	74	$75\frac{1}{4}$
New South Wales Stocks (3 per cent.) ...	$86\frac{1}{2}$	$84\frac{3}{4}$	83

Taking into account the increase in imports, the inelasticity of exports, the increasing investment of private capital, the growth of expenditure by Federal and State Governments, coupled with the facts that a bad season occurred in 1912, and that a continued decline in the pastoral industry tended to diminish the national income, it is probable that in these years the community was not only spending the whole of its earnings, but was drawing upon the capital resources accumulated in the preceding period to supply its monetary needs. The rapid growth of expenditure is apparent from the following comparisons:—

	1910.	1913.	Increase of 1913 over 1910.
	£ (millions).	£ (millions).	£ (millions).
Commonwealth Total Expenditure in year commencing July ...	13·2	15·6	2·4
N.S.W. Governmental Expenditure in year commencing July ...	6·8	7·4	0·6
Public Debt Total—			
Commonwealth ... ..	Nil.	7·4	7·4
N.S.W. ... ..	92·5	106·1	13·6
Local Government ... ..	4·6	7·1	2·5
Imports, N.S.W. Annual ... ..	23·2	32·3	9·1
Nominal Capital of new Companies formed ... ..	7·0	12·3	5·3

During these years the relative productive activity of the community did not increase, and the value of exports remained stationary, though the annual value of production rose from £64,300,000 to £77,900,000.

In view of the fast-growing demand for financial accommodation, and the uncertainty in the position of primary production, the only source which might produce new supplies of money, the banks adopted a policy of discouraging excessive speculation by declining to make advances. As capital continued to be invested in the extension of existing enterprises and the establishment of new concerns, investors were forced frequently to realise on some of their holdings, with the result that, though dividends and profits ruled high, the market prices of many stocks exhibited a tendency to decline. The growth of business activity which had proceeded rapidly after 1909 was retarded in 1913, and the threatened development of an excess of

company promotion and speculation above the needs of the times was checked, and a period of easy financial conditions commenced early in 1914.

But the adjustment in values consequent on the greater activity of international trade continued to manifest itself in a way favourable to Australian trade, and did much to retain in New South Wales a fictitious prosperity, which depended for its maintenance more and more upon increasing prices. The prices of Australian produce continued to rise faster than those of imported commodities, as is seen from the following index numbers of wholesale prices of commodities locally consumed :—

Commodities.	1911.	1912.	1913.	1914.
Australian ... ..	1000	1185†	1113	1188
Imported ... ..	1000	1023	1054	1041
All Commodities ... ..	1000	1129	1092	1137

† Due to bad season.

This increase in prices did much to sustain the commerce of the State at a time when the value of its export trade threatened to contract below the level of imports. The magnitude of its effect is shown by the comparison already made on page 640, between value and volume of production per head of population.

The overseas market for Australian produce expanded continually, and the export trade was encouraged still further by rising prices. Thus, world-prosperity stimulated the export of local produce to favourable markets abroad, and under this stimulus prices rose still higher in local markets, and produced important reactions. As the cost of commodities rose, wages had risen, and two new and important factors were introduced into the economic situation. Higher wages constituted a permanent element of increase in the cost of producing commodities, and every addition to the purchasing power of the community caused a further demand for goods, favouring a further rise in prices.

The rise in the values of Australian produce which had occurred principally in overseas markets was reflected naturally in a rise in the retail prices of foodstuffs, and particularly of meat, at home. The prices of food and groceries now took a rapid upward course, and, accompanied by a rise in rents, brought about an increase of 20 per cent. in the cost of living, which rendered economic problems more difficult than ever, and constituted a prolific cause of industrial discontent.

The following examples illustrate the rapid rise which was proceeding in the prices of food and in rents, and show in concrete form the difficulties with which workers on fixed wages were contending :—

Commodity.	1920.	1911.	1913.	1914.
	s. d.	s. d.	s. d.	s. d.
Bread ... .. per 2 lb. loaf	0 3½	0 3½	0 3½	0 3½
Beef—Sirloin ... .. per lb.	0 4½	0 4½	0 5	0 5½
Mutton—Leg ... .. "	0 3	0 3	0 3½	0 4½
Butter ... .. "	1 1½	1 1½	1 1½	1 2½
Milk ... .. per quart	0 4½	0 4½	0 5½	0 5½
Sugar ... .. per lb.	0 2½	0 2½	0 2½	0 2½
Tea ... .. "	1 3	1 3½	1 2½	1 3½
Rice ... .. "	0 2½	0 2½	0 3	0 3
House Rent—				
5 rooms ... .. per week	15 4	17 1	18 6	18 7

The purchasing power of the sovereign fell rapidly, and with it effective wages depreciated despite a steady increase in the average nominal rate. The movement during this period may be gauged from the following summary of wages as affected by the rising cost of living :—

Trade or Calling.	1910.	1911.	1913.	1914.
<i>Manufacturing—</i>	s. d.	s. d.	s. d.	s. d.
Boot-clickers ... .. per week	48 0	54 0	54 0	54 0
Tailors (Journeymen) ... .. "	55 0	55 0	55 0	60 0
Boilermakers ... .. "	62 0	66 0	66 0	66 0
Moulders (Iron) ... .. "	60 0	66 0	66 0	66 0
Fitters and Turners ... .. "	64 0	64 0	70 0	70 0
Coppersmiths ... .. "	68 0	68 0	72 0	72 0
Electrical Fitters ... .. "	66 0	66 0	72 0	74 0
Labourers (Iron Trades) ... .. "	45 0	45 0	48 0	48 0
<i>Building, etc—</i>				
Carpenters ... .. per week	63 0	63 0	72 0	72 0
Bricklayers ... .. "	69 0	69 0	75 0	81 0
Stonemasons ... .. "	72 0	72 0	76 0	76 0
Plasterers ... .. "	57 0	57 0	66 0	81 0
Painters ... .. "	60 0	60 0	64 0	64 0
Bricklayers' Labourers ... .. "	42 0	48 0	51 0	51 0
<i>Rural Industries—</i>				
Boundary-riders ... .. per week, with keep	25 0	25 0	25 0	25 0
Farm Labourers ... .. "	25 0	25 0	25 0	25 0
Milkers ... .. "	25 0	25 0	25 0	25 0
Shearers ... .. per 100 sheep shorn	24 0	24 0	24 0	24 0
<i>Mining—</i>				
Coal Miners ... .. per ton (best coal)	4 2	4 2	4 2	4 2
Coal Wheelers ... .. per week	43 6	43 6	50 0	51 0
Silver Miners ... .. "	60 0	66 0	66 0	66 0
" Mine Labourers ... .. "	51 9	57 0	57 0	57 0
<i>Females, with Board and Lodging—</i>				
General Servants ... .. per week	15 0	16 0	17 6	20 0
Cooks ... .. "	21 0	22 0	27 0	30 0
Index Nos., Year 1911 = 1000.				
Nominal Wage (Adult Males) ... ..	964	1000	1084	1092
Effective Wage (Adult Males) ... ..	1012	1000	975	945
Cost of Living (Food and Rent) ... ..	953	1000	1112	1155

It will be observed that, while a steady rise in wages persisted from 1910 to 1914, the cost of living rose faster, with the result that the effective wage actually decreased by 5 per cent. in the period.

It had been found necessary by the Arbitration Court of New South Wales in November, 1911, to increase the "Harvester Wage" of 42s. per week, which had received general application as a minimum, to 45s. per week, and a further general advance of wages ensued, as showing in the following statement of the average wages of all trades each year :—

	s. d.		s. d.
1910 ... ..	49 7	1913 ... ..	55 9
1911 ... ..	51 5	1914 ... ..	56 2
1912 ... ..	54 3		

The continued rise in prices and the continuance of industrial discontent led the State Government in 1913 to appoint Royal Commissions to inquire into food supplies and prices, and to examine the arbitration system of the State. Both Commissions included in their reports a recommendation that some permanent body should determine regularly a living wage in accordance with the cost of living.

This task was undertaken by the Court of Industrial Arbitration, and in February, 1914, a living wage of 48s. per week was declared. The standard wage was defined as "that which will do neither more nor less than enable a worker of the class to which the lowest wage would be awarded to maintain himself, his wife, and two children—the average dependent family—in a house of three rooms and a kitchen, with food, plain and inexpensive, but quite sufficient in quantity and quality to maintain health and efficiency, together with allowance for certain other specified expenses." In this way a method was introduced into wage determinations which operated with considerable success in keeping the purchasing power of wages nearly constant.

The factory and workmen's legislation of the country had lagged considerably behind that of older countries. The Factories Act of 1896, which had been long delayed, remained substantially the basis of factory legislation. Its benefits had been extended from time to time by supplementary acts, by the Early Closing Acts, the Minimum Wage Act, and the Saturday Half-Holiday Act. A consolidation of factory laws was made in 1912. A measure of Workmen's Compensation had been discussed for a number of years, but bills introduced into Parliament failed to pass until 1910, when a measure closely modelled on an Act passed in England in 1897 became law, granting a right to compensation in cases of incapacity or death resulting to workmen from any injuries received in the course of their work.

Serious deficiencies had become apparent in the system of Wages Boards which had been established in 1908. Provision had been made for the establishment of any required number of boards, and considerably more than one hundred had been set up without co-ordinate principles or effective provision against overlapping. The intention had been that these bodies should be left as free as possible to operate as trade conferences of a conciliatory nature, but they developed into independent quasi-judicial tribunals. There had resulted considerable disorganisation in the system, and both employers and employees were put to considerable expense and trouble in following proceedings before several tribunals concurrently. Moreover, the chairmen of these boards were usually engaged in other occupations, and, owing to the intermittency of their sittings, considerable time was lost in making awards.

A change of Government led to another recasting of the system in 1912, when the Industrial Disputes Act was repealed by the Industrial Arbitration Act. Though the structure of the system was changed, the principles of the Act of 1908 remained. Approximately 150 wages boards were in existence, and these were now divided into 27 industrial groups over each of which was placed a chairman charged with the special duty of securing consistency between awards. Definite statutory powers were given to grant preference to unionists, and, while strikes remained illegal, the penalties were restricted to fines or to deregistration of the industrial union concerned. The success which had attended the efforts of an investigation officer, appointed in 1911, encouraged the Government to provide special machinery of conciliation.

Once again it was claimed that a prompt hearing was ensured for all grievances, and that less justification existed for determining industrial disputes by strife. To ensure the observance of awards, additional inspectors were appointed, and the rapid increase in importance of industrial matters led to the establishment of a separate portfolio in the Ministry in 1911, and of a State Department of Labour and Industry in 1912.

However much the new and more efficient machinery for securing industrial justice operated to prevent disputes and to promote a continuance of work, it cannot be claimed that it was successful in maintaining industrial

peace. In the difficult period following 1913, industrial disturbances became more frequent and assumed larger proportions, although far more disputes continued to come from the mining industry than from all others combined. Dissected in this way the statistics of the extent and wages-cost of strikes were :—

Year.	Mining Industry.			Non-Mining Industries.		
	Workers Involved.	Working Days Lost.	Estimated Loss of Wages.	Workers Involved.	Working Days Lost.	Estimated Loss of Wages.
			£			£
1910 ...	7,032	61,508	29,300	7,264	39,262	16,200
1911 ...	10,831	246,875	120,900	9,479	110,346	43,800
1912 ...	27,389	67,869	34,700	3,775	28,100	11,700
1913 ...	28,848	237,577	123,700	13,378	129,196	57,100
1914 ...	56,372	732,295	384,500	18,884	179,478	86,000

Strikes now tended to arise less from claims for increased wages than from questions involved in working conditions, such as demarcation of work, quantity of work, hours of commencing, employment of non-unionists, and the like. It gradually became clearer that the strike was the customary weapon to secure redress of grievances in the mining industry, and that it was gaining popularity in other industries.

The new and rapid growth of activity among trade unions which had commenced in 1907 continued until 1912, but, though numerical development then slackened, unionism did not cease to progress. Very considerable activity existed in matters of politics, propaganda, and organisation among the many powerful bodies which had grown up. When, in 1912, wages boards were arranged in industrial groups, the formation of larger unions was encouraged. While 116 new unions were formed, so many were absorbed by amalgamation that the number in existence increased by only 45. Unionism made rapid headway among non-manual and women workers. New trade unions embracing hospital and asylum employees, public school teachers, actors, railway construction inspectors, journalists, railway officers, vaudeville artists, health inspectors, and clerks, were registered in these years, while more women's organisations were formed, and the number of female unionists rose from 2,226 in 1910 to 8,239 at the end of 1914.

Among employers little activity was displayed in forming trade or industrial unions. Combinations among employers proceeded on a larger scale in their capacity as controllers of industry, and additional new organisations were formed for general business purposes, sometimes including the fixing or stabilising of prices. New industrial unions of employers were registered in the following trades:—Butchers, bakers, hairdressers and tobacconists, builders, farriers, and brick-carters.

The popular feeling that much of the rise in prices was due to the operations of combined interests in commerce, led to considerable activity on the part of the Government in the matter of inquiry. A general investigation into the conditions governing food supply and prices in New South Wales was instituted, while the Federal Government appointed a commission to inquire into the sugar industry, and, finding its powers inadequate in this and other matters, submitted comprehensive proposals to the electors for amending the Constitution, none of which, however, was approved.

The action taken by the State Government was extended further. The manufacture and supply of gas was regulated in 1912 by Act of Parliament, and a large number of State industrial undertakings were established, principally

to supply Government needs, but also, in some cases, to compete with private enterprises. The new undertakings embraced the establishment of metal quarries and brickworks in 1911; limeworks, timber and joinery works, and a clothing factory in 1912; a metal quarry, dockyards, and a building construction branch in 1913; and a bakery, monier-pipe and concrete works, a State motor garage and power station in 1914.

The encouragement of local manufactures was not neglected. In addition to the protection given by the tariff, encouragement was directly given in a number of industries by a system of bounties granted by the Federal Government on the production of preserved fish, wool tops, metal manufactures, mineral oils, wood-pulp, and phosphates. An important advance was made in the iron and steel industry by the establishment of extensive works at Newcastle, which were begun in 1914 and opened in 1915. Other manufacturing ventures made rapid headway as is apparent from the following particulars of the manufacturing industry in New South Wales:—

Year.	Number of Establishments.	Value of Machinery and Plant.	Number of Hands Employed.	Total Value of Output.	Value Added to Raw Material.
		£		£	£
1910	4,821	11,579,000	99,711	49,616,000	17,052,000
1911	5,039	12,511,000	108,624	54,346,000	19,432,000
1912	5,162	13,795,000	115,561	61,163,000	22,681,000
1913	5,346	14,862,000	120,400	65,672,000	23,764,000

The rapid industrial and commercial development accelerated the concentration of population in Sydney and other large centres, and a shortage of small dwelling houses became apparent in the metropolis. This shortage steadily became more acute. In view of this fact, and the rapid rise in rents, a scheme for the construction of small dwelling houses was inaugurated by the Government in 1912. The rate of erection of new buildings in Sydney and suburbs now exceeded 8,000 per annum.

Concurrently a marked improvement in the rate of growth of the population became apparent from two causes, namely, the policy of assisted immigration, and a higher birth-rate. In the five years 1910–1914 more than 45,000 persons were assisted to immigrate to the State. The birth-rate, which had fallen heavily over a period of twenty-five years, improved noticeably, and the marriage-rate rose higher than it had ever been. The changes in the rates are apparent in the following table:—

Year.	Birth-rate, per 1,000 living.	Marriage-rate, per 1,000 living.
1889	34·97	7·06
1894	31·75	6·25
1903	25·55	6·93
1912	29·90	9·56

The policy of the Government favoured a considerable expansion of the education system. After extensive inquiries, the existing system was remodelled. Facilities for secondary education were extended, fees at high schools were abolished in 1912, and a generous system of bursaries and scholarships introduced. Access to the University was facilitated by grants of bursaries and of exemptions from fees, and in this way an avenue was opened from primary school to University. The popular desire for higher education was so great that a strain was almost immediately placed on the new system, and in later years it could not expand fast enough to meet the



continually growing needs. Concurrently, extensions were made in the system of technical and trade schools, and continuation schools were introduced.

In land settlement new leasehold tenures were devised to replace the alienation of land by conditional purchase, and a more intense development was produced by the grant of living areas which were inalienable and involved a long term of residence as a condition of the grant. By 1913 the annual number of applications and confirmations of small holdings of land had more than doubled. Work had so far advanced on the Murrumbidgee Irrigation Area that in 1912 the first batch of farms was made available for settlement. An interstate agreement respecting a similar scheme on the Murray River was signed in 1914, though work was not begun until 1919.

The question of the financial relationship between Federal and State Governments had been considered from time to time in various phases, and, in 1910, several important decisions were arrived at. Firstly, the expiration of the "Braddon Clause" at the end of the year placed upon the Federal Government the necessity of determining a new basis for the return of surplus revenue to the States. In view of the expanding Federal expenditure, the cost of the new defence schemes and the increasing amounts required for old-age and invalid pensions, the amount returned was considerably reduced, being fixed at 25 shillings per capita for the next ten years. This new arrangement resulted in an immediate decrease of more than a million pounds annually in the revenue of New South Wales from this source.

Since this reduction in revenue was accompanied by an increasing expenditure, it led to the imposition of a heavier income tax in 1912 and again in 1914, when stamp duties were reimposed. At the same time Local Government rates and charges grew steadily. Considered on a per capita basis the amount of taxation imposed in New South Wales by the various authorities was as follows:—

Authority imposing Taxation.	1910-11.	1912-13.	1914-15.
	£ s. d.	£ s. d.	£ s. d.
Commonwealth ...	3 14 9	4 3 9	4 3 8
State ...	0 15 7	0 19 1	1 11 4
Local Government ..	1 3 11	1 6 7	1 14 11
Total ...	5 14 3	6 9 5	7 9 11

The prosperity of the period had proceeded on a high plane until 1914, but there was not a general increase in productive activity, and the expansion of the national income from production was caused by a further increase in prices. Nevertheless excellent financial conditions prevailed, industry and enterprise flourished, employment was good, and wages high, and money circulated freely. But indications of decay in the foundations of this prosperity were not wanting. Sheep flocks, which had decreased since 1909, were further depleted by the dry season of 1914, the advent of war had an unsettling effect on markets, and for a time prices fell.

The outlook of 1914 was very different from that of 1910, and far less encouraging. Various forces had operated for a lengthy period to raise the condition of the State to a high pitch of prosperity, which they now appeared unable to maintain, and a decline seemed inevitable. The need for caution in investment and expenditure was rendered more pressing by the drought of 1914, and by a further decrease in the volume of production. The outbreak of war resulted at first in the closing of markets, and a fall in prices apparently added the touch needed to consummate the misfortunes of the community.

## 1915-1920.

The first serious effect of the war on the State was to throw it upon its own economic resources, and although the principle of "business as usual," was widely urged, it was soon found impossible of practical application. Trade and commerce abroad were disorganised, shipping facilities became more restricted, and markets fell into a chaotic condition when peace-time activities practically came to an end in the belligerent countries. Moreover, production of the goods which the State had formerly imported, decreased, and, owing to the resultant scarcity, the volume of imports, which contracted appreciably in the first year of war, became smaller and smaller until 1918, when they were less than one-half of their pre-war magnitude. Shipping space was so largely devoted to war services, that adequate accommodation could not be obtained to meet the requirements of the export trade, and large quantities of produce were stored for lengthy periods in New South Wales, as in other States.

During these years financial assistance from overseas was less readily obtainable, and, in addition to the unprecedented drain of Government borrowing for war and other purposes, there fell on the local money market the need of financing the huge stocks of wheat and other goods, pending sales and shipment, and of providing the money needed for new enterprises.

The withdrawal of large numbers of men from productive work for war service, and the occurrence of bad seasons in 1914, 1918, 1919, and 1920, combined to produce a serious decline in the quantity of production, and the State was saved from a crisis only by the extraordinarily high prices which were obtained for its produce. But the general prosperity continued with little abatement, and, outwardly, conditions became better toward the close of the period. The appearance of this prosperous condition within the State was heightened by the fact that some economy was enforced by the scarcity of imported goods. But, even so, shipping difficulties would probably have proved a very serious embarrassment but for the sale to the Imperial Government of the wool clips from 1916 to 1920, and of large quantities of wheat, meat, butter, and metals, which were paid for before the time usual in the ordinary course of trade. The immediate general situation was improved by the large loan expenditure of the Government. The salient features of the condition of trade in these years are shown in the following summary:—

Year.	Exports Oversea.			Actual Excess of Exports over Imports.		Loan money Expended by Government.
	Actual Value.		Value if 1911 Prices had Ruled.*	Including Gold.	Excluding Gold.	
	Goods.	Gold.				
	£ (millions.)	£ (millions.)	£ (millions.)	£ (millions.)	£ (millions.)	£ (millions.)
1911	27·8	4·4	32·2	+ 4·9	+ 1·8	4·0
1914-15	27·0	1·1	25·1	+ 0·8	- 0·1	7·0
1915-16	31·9	9·1	32·0	+ 7·6	- 1·2	8·2
1916-17	39·2	11·0	34·3	+ 17·5	+ 6·6	6·9
1917-18	36·9	2·8	23·6	+ 10·1	+ 8·5	4·5
1918-19	48·9	2·2	29·0	+ 5·0	+ 5·3	3·9
1919-20	53·3	1·7	30·0	+ 10·4	+ 8·8	8·8

\* Commonwealth Statistician's Indexes of Export Values used.

- Excess of Imports.

Despite the difficulties which confronted it in the early years of the war, the Government of New South Wales made strenuous endeavours to maintain its developmental policy. Not only was it felt that a need existed to open up the resources of the State, so that production might not be hampered after the war, but it was also recognised that the slackening of private enterprise, if accompanied by a cessation of construction on Government works, would produce wide unemployment, and cause embarrassment to the State. To this end a contract was made in 1915 with an English firm, whereby they undertook to construct a number of important public works. However, the financial stringency of the war period rendered the agreement abortive, and its operation practically ceased in May, 1917.

Work had proceeded apace on the Murrumbidgee Irrigation Area, the North Coast Railway, the City Railway, and the construction of the wheat elevators. Though operations were now more restricted, and difficulty was still encountered in raising money, the number of men employed on Government undertakings gradually increased after the strike of 1917, but only 9,000 were then employed, compared with more than 20,000 before the war. In the latter part of 1919 the developmental policy was revived, particularly in railway construction, and the number of employees engaged on Government works again approached 20,000 in November, 1920. This expansion went some distance toward supplying work when conditions of employment were bad on account of the failure of the post-war stimulus, but owing to increasing financial stringency the number had fallen to 15,000 by June, 1921.

After the outbreak of war, a considerable decline in land settlement set in, and proceeded unchecked until 1917, when a revival commenced. No new principle of importance was enacted, except that provision was made for special facilities for the settlement of returned soldiers. New holdings were granted mainly on leasehold tenures, although, after 1917, a considerable increase in conditional purchase grants was also shown.

The progress made with the Murrumbidgee irrigation scheme promoted a new growth of intensive settlement. In all, nearly 1,000 farms were in occupation on the area by 1920, and factories for the treatment of dairy produce and fruit had been established under Government control.

The flow of immigration almost ceased in 1914. The birth-rate declined steadily until June, 1920, and, owing to the departure of soldiers for service overseas, the population showed no increase until 1917, when a steady flow of soldiers returning from abroad commenced and continued until all had returned by the middle of 1920. During the war no rural workers were introduced from overseas, and the drain of enlistments for active service abroad continued. A rapid decline in the number of persons permanently engaged in rural industries continued from 1915 to 1918, but in 1919 the number increased nearly to its pre-war level. The number of employees in factories decreased, at first on account of the dislocation of trade due to the outbreak of war, and then on account of enlistments. The substitution of women for men was not extensive, though in the growth of manufacturing activity the employment of women increased. The basis of a number of new establishments was laid by manufacturers endeavouring to supply local substitutes for goods unobtainable, or costly, overseas; considerable development began at Newcastle in the metal industries, which, in June, 1921, gave employment to 8,000 men. During this period the manufacturing industry gained rapidly in importance, and assumed a prominent place among the sources of wealth production. The relative progress of the rural and manu.

facturing industries, and the amounts contributed by each to the value of production in these years, may be indicated thus :—

Year.	Permanent Rural Workers.	Factory Workers.		Value of Production.	
	Males.	Males.	Females.	Rural Industries.	Factories.
				£ (millions.)	£ (millions.)
1913	128,000	93,000	27,000	42·8	23·5
1914-15	122,000	90,000	26,000	38·8	24·0
1916-17	116,000	89,000	29,000	52·3	26·7
1918-19	114,000	97,000	31,000	56·9	32·2
1919-20	127,000	110,000	34,000	67·1	38·6

Owing, however, to the absence abroad of more than one-third of the male population of military age and to the occurrence of seasons unfavourable to the primary industries, the volume of production was not maintained satisfactorily in any industry. The relative productive activity or quantity of production per head of population fell heavily, and its effects, which otherwise must have been disastrous, were counteracted partly by the large amount of money expended for war purposes in the Commonwealth, but principally by the rise in prices, which more than compensated for the loss, and enabled the continuance of the outward signs of commercial and industrial prosperity even amid all the adverse circumstances. Expressed in a generalised way, the important effects of prices may be shown thus :—

Year.	Value of Production per head (Index Nos. 1911-1000.)			Volume of Production per head (Index Nos. 1911-1000.)		
	Primary Industries.	Manufacturing Industry.	All Industries.	Primary Industries.	Manufacturing Industry.	All Industries.
1911	1000	1000	1000	1000	1000	1000
1914-15	904	1109	963	757	889	795
1915-16	1165	1145	1159	921	761	875
1916-17	1205	1228	1212	821	783	810
1917-18	1288	1317	1297	819	697	784
1918-19	1187	1426	1256	714	714	714
1919-20	1342	1649	1430	657	709	672

Though the actual volume of production fell so far below the pre-war level, the value of production per head of population rose under the stimulus of increasing prices, and remained on a much higher level than it had ever occupied since 1871; and it is to be remembered in making the comparison that a succession of unusually prosperous seasons had begun in 1903. The circulation of money was further augmented by the expansion of the Commonwealth note issue, the large expenditure of loan money for war purposes, particularly in the form of military pay, gratuities and home-building loans to soldiers and their dependents, and by increased loan expenditure by the State Government; while, owing to the scarcity of commodities, the volume of imports declined rapidly.

These facts go far to explain the continuance of the appearance of general prosperity, which assumed a more irrational phase after 1917. Money flowed freely, and the continual rise of prices did not operate effectively to check it. Business conditions, on the whole, were excellent, and many business houses were able to amass sufficient reserves to provide fresh capital for the expansion of their enterprises. Moreover, the State was enabled to draw for its development in a greater measure than formerly on the resources of its citizens, who also contributed a very large proportion to the war loans of the Commonwealth Government, which were so successful that nearly two-thirds

of the debt contracted by the Commonwealth during the war were payable in Australia. The net proceeds of Commonwealth war and peace loans raised in Australia to the end of 1920 were:—

Year.	In the Commonwealth.	In New South Wales.	Year.	In the Commonwealth.	In New South Wales.
	£	£		£	£
1915	13,389,440	5,503,200	1919	25,025,370	9,271,290
1916	45,243,330	21,051,690	1920	26,485,410	9,240,940
1917	42,797,800	18,127,620			
1918	87,034,150	37,530,280	Total ...	239,975,500	100,725,020

Over two million pounds were raised by means of War Savings Certificates in New South Wales, and a further sum of £5,130,000 was subscribed during the same period to patriotic funds in the State in aid of soldiers and their dependents.

During the war, also, the State Government and many private employers paid to the members of their staffs who had enlisted the difference between their military and civil pay, and the Friendly Societies kept their soldier members financial by paying their contributions from surplus funds, or, where those were not available, by levying on the other members.

The difficult conditions which affected primary industries as regards production, supply, and marketing, together with considerations of the needs of the Imperial Government for war purposes, led ultimately to a close Government control of the disposal of much of the produce of the State. The whole of the wheat grown in the 1915 season was acquired compulsorily at a fixed price under a special Act of Parliament; and thereafter, from year to year, successive wheat crops were pooled in conjunction with the other wheat-producing States of the Commonwealth, and controlled by a central authority, which negotiated sales abroad, fixed prices locally, arranged the difficult question of shipping accommodation, financed the growers to some extent pending sales, and arranged advances to farmers.

The scarcity of ocean freights led to the accumulation of huge stocks of wheat in the country; but, though considerable losses were experienced from rain and plagues of mice and weevils, and considerable delay occurred in making payments to farmers, it is probable, in view of all the circumstances, that the system was advantageous to the wheat-growing interests of the State. In the 1915-16 season, a record crop for New South Wales—exceeding 66,000,000 bushels—was harvested; and, though in the ensuing years farmers did not produce on this large scale owing to the uncertain outlook and the bad seasons, the production of wheat remained much greater than ever before, except in the unfortunate years 1918 and 1919. In 1920, under the stimulus of a high Government guarantee, another unusually large crop was harvested, and this conferred great financial benefit on the State in 1921. The increasing importance of wheat-growing is apparent from the following table:—

Season.	Area under Crop for Wheat Grain.	Production of Wheat.		Value of Wheat and Flour Exported during year.
		Quantity.	Value.	
	acres (thousands.)	bushels (thousands.)	£ (thousands.)	£ (thousands.)
1910-14 (average)	2,541	27,263	4,596	2,839
1915-16	4,189	66,765	13,353	3,361
1916-17	3,807	36,598	5,642	5,802
1917-18	3,329	37,712	7,385	2,966
1918-19	2,410	18,325	3,589	4,950
1919-20	1,474	4,388	2,194	2,320
1920-21	3,124	55,625	20,194	11,174

Difficulties at first attended the disposal of wool, but by December, 1914, it was apparent that a heavy demand existed for those types suitable for naval and military purposes—mainly crossbred—and for higher grade merino wools. The demand proved so strong that prices moved upward at a rapid rate, breaking previous records, until toward the close of 1916, greasy merino wool realised as much as 27½d. per pound—a record at the time. At this point a sudden break in sales occurred, owing to a coal strike in New South Wales, and the consequent disorganisation of transport facilities.

Before sales were resumed, an offer was made by the Imperial Government to purchase the unsold portion of the clip at a price to be determined by agreement. The offer was accepted, and an average price of 15½d. per pound—approximately 55 per cent. above the pre-war average—was fixed as equitable to all interests concerned. The agreement was renewed subsequently under conditions more favourable to the growers, with the result that the Imperial Government purchased all Australian wool produced from 1916 to the middle of 1920, and paid for it on appraisalment. This scheme proved of inestimable benefit to Australia during the war, for it secured a definite outlet at an assured minimum price for the staple product, relieved local interests from embarrassing shipping troubles, and ensured prompt returns to growers, not only for their saleable wool, but also for the large unmarketable proportion of inferior wools.

This method of disposing of the wool-clips produced a very efficient system of appraisalment, by which Australian wools were graded definitely into classes, ultimately numbering 848, which permitted an accurate valuation of all wools grown. It became apparent toward the end of 1920 that the large accumulation of inferior wool would constitute a serious problem in succeeding years. To meet the new emergency, and to control future sales, a new company was formed early in 1921 from the old organisation, and named the British Australian Wool Realisation Association, Limited (Bawra.) Its assets amounted to £22,000,000, and it controlled the disposal of a large proportion of the “carry-over” wools and of the clip of 1920. The immediate difficulties confronting the Association were the weakness of the demand on account of the post-war condition of European countries, and the consequent stagnation of markets. A revival in demand, however, became apparent toward the middle of 1921.

But even with the stimulus of the very favourable market which existed until June, 1920, for both wool and meat, the pastoral industry failed to make headway against the adverse seasons, and a decline is apparent in the following figures, which reveal also the extent of the benefit derived financially from the enhanced prices obtained:—

Year ended June.	Number of Sheep at end of Year.	Production of Wool.	Estimated Value of Pastoral Production.	Value of Export.	
				Meat.	Wool.
		lb.	£	£	£
	(millions.)	(millions.)	(millions.)	(millions.)	(millions.)
1911-13 (average)	41·3	352·1	19·9	1·3	13·4
1915-16	32·6	262·0	21·6	·9	12·0
1917-18	38·6	284·1	28·4	1·6	19·3
1919-20	29·2	296·6	34·0	2·6	19·4

The number of sheep in the State had been declining since 1910, and when the severe drought had terminated in June, 1920, the number was at the lowest point it had reached since 1902. The wool-clip of 1919-20 was shorn in the latter half of 1919, and was not affected materially by the drought.

Steps were taken by the State, at the request of the Imperial Government, in 1915, to secure for its use during the war the whole of the exportable surplus of the meat of the State. This meat was acquired locally through the agency of the Government until toward the end of 1920. The Imperial Government also purchased considerable quantities of local butter by contract. The prices paid for these commodities were in accordance with the high rates ruling in the markets of the world, and provided a handsome return to producers.

These gigantic transactions were carried out in a broad spirit of Imperial patriotism, and while they did much to promote the successful issue of the war, they also helped materially to stabilise local conditions at a time of considerable economic danger.

The effect of the war in its early stages on local trade and commerce had been to restrict enterprise and to deaden business. Quotations for stocks, which had advanced in the early part of 1914, fell heavily, and the Stock Exchange was closed to avoid possibility of a panic. Some industries, including metalliferous mining ventures, closed down, temporarily, while others operated part-time, and employment became bad. It was officially estimated that, at the end of 1914, more than 11,000 persons were unemployed in the State, and that nearly 40,000 more were employed only part time. In the general uncertainty that prevailed the spirit of enterprise disappeared, and business operations were curtailed until conditions should assume more definite shape. The revival in the mining industry was speedy and, until toward the close of 1920, the industry enjoyed the stimulus of very high prices for its products.

Some uncertainty, however, continued for more than three years, and there is evidence from bank returns and other sources that owners of capital preferred to allow it to accumulate and to await developments rather than to seek investments. New company registrations fell off rapidly until 1917, shares in local investment companies depreciated, and profits dwindled, but after the end of that year a steady expansion in trade again commenced. By the close of 1919 the general revival had established itself into a virtual boom, which, however, burst towards the close of 1920, when the post-war trade stimulus became exhausted. The possibility of obtaining fresh supplies of capital was precluded for a time by the decreased production which accompanied and followed the severe drought of 1919-20, and the position was rendered more difficult toward the end of 1920 by the sudden expansion which occurred in the import trade. In a period of nine months following June, 1920, the value of goods imported from overseas was twice as great as in the corresponding period of the previous year, while the export trade showed a shrinkage. In the twelve months ended June, 1921, imports exceeded exports by more than £20,000,000, with the result that exchange on London turned heavily against the State. A forced economy in importation resulted, and the money market hardened.

In the second half of 1920 prices began to fall, unemployment again increased, and industrial conditions generally took a turn for the worse. The heavy commitments abroad of firms which had imported large quantities of goods at high prices, coupled with the general indisposition of the consuming

public to buy, led to strenuous endeavours by these firms to realise on their stocks. This process was so successful that serious financial disorder was avoided, even though the banks did not find it expedient to meet all the demands for accommodation made upon them, and credit was restricted.

It was fortunate that the banking position had continued strong, and this fact may probably be explained in two ways. The periods of severe strain had been short, and had interrupted only for a brief space the remarkable condition of prosperity which various causes had contrived to bring about; and the associated banks had maintained a cautious policy, which disciplined finance, and enabled the whole commercial community to meet the crisis with confidence.

The expansion of the note issue and the withdrawal of gold from active circulation at the beginning of the war had been accomplished without apparent disorganisation, and the restrictions imposed on the export of gold by the Commonwealth Government in the middle of 1917 served to stop the rapid outpouring which had commenced, but did not disturb seriously the commerce of the country, though it prevented any further depletion of the gold reserves of the banks.

The effect of these measures and the expansion of the active currency of the State is shown in the following table:—

Nature of Currency.				1911.	1916.	1921.
				£ (thousands.)	£ (thousands.)	£ (thousands.)
Metallic	...	...	...	3,212	1,098	1,656
Paper	...	...	...	2,143	5,415	9,640
Total	...	...	...	5,355	6,513	11,296
Per head of Population	...	...	...	£3 4 4	£3 8 9	£5 7 2

Though the gold reserves of the Federal Treasury expanded rapidly as the issue of Australian notes proceeded, the gold reserves of trading banks in New South Wales declined from £12,202,000 in 1911, to £11,006,000 in 1916, and to £8,637,000 in 1921.

Banking transactions during the period practically doubled in magnitude, as expressed in terms of money. Throughout the period, despite the heavy strain put upon the financial resources of the community, a considerable margin was always maintained by deposits above advances, and this conduced to a healthy condition of affairs very dissimilar from that accompanying the depression of the nineties. The pre-war ratio of advances to deposits hardly varied until 1918, in which year, and in 1919, an added demand for financial accommodation to meet the war loans and to combat the ravages of the drought increased the demand for advances. But toward the end of 1919, advances again declined and deposits increased. The position became reversed in the second half of 1920, and for a short time advances exceeded deposits. This heavy drain on the resources of the banks was due largely to the sudden rush of imports and to the stagnation of business and enterprise caused by the expectation of a fall in prices. A consideration of the Savings Bank returns indicates that throughout the community a considerable surplus of income over expenditure existed, and that increasing numbers of persons



were able to save from their earnings. The absolute extent of the banking and commercial development is apparent from the following comparisons:—

	1913.	1914.	1917.	1919.	1920.
<b>Trading Banks—</b>					
Deposits ... .. £ (millions)	58·9	62·0	84·0	93·9	103·4
Advances ... .. „	46·9	51·8	63·0	88·8	89·1
Bank Clearances ... .. „	348·7	353·1	444·5	590·1	764·5
<b>Savings Banks—</b>					
Deposits ... .. £ (millions)	29·6	33·2	40·8	47·0	49·9
Depositors ... .. (thousands)	647	718	872	985	1,054
<b>Limited Liability Companies—</b>					
Number making Returns ... ..	1,695	2,283	2,311	2,530	2,781
Number formed ... ..	444	354	159	267	801
Nominal Capital ... .. £ (millions)	12·3	7·4	5·9	9·1	61·7
<b>Bankruptcies—</b>					
Sequestrations ... .. (number)	320	375	267	282	289
Deficiencies ... .. £ (thousands)	65	182	20	133	65

An important feature of the above statement is the growth of company promotion in 1920. Though the figure of that year was swollen considerably by the reconstruction of many companies to meet the altered conditions of industry, due to the war-time expansion and the rise of prices and wages, there was a remarkable outburst of company promotion. It was estimated by the Registrar-General that 648 entirely new companies were formed during the year, with a nominal capital of £38,700,000, while 291 existing companies increased their nominal capital by nearly £12,000,000. A comparison with corresponding figures for the years immediately preceding the war, when commercial activity had reached a high pitch of intensity, is necessary in order to realise the full extent of this development.

However, not a little of the expansion shown here had its origin in the prosperity engendered by war conditions, which existed practically in all countries of the world, and was due to enhanced prices and to the large Government expenditure on armaments and armies. But, of the large expenditure of the Commonwealth on the war, somewhat more than £100,000,000 was raised in New South Wales by loans, and it is probable that an equal or larger sum was spent in the State. With this amount diverted from normal investments and put rapidly into circulation in the country, it is perhaps a matter for less wonder that the absence of so many producers overseas, and the decline in production, failed to check the general condition of prosperity which now had moved from a real to an artificial basis.

One feature of the enormous vogue of borrowing for war purposes, and of the depreciated purchasing power of money, was the fact that interest rates, which had been moving upwards, now rose rapidly, and the movement was reflected in a severe decline in the price of Government stocks. But the general banking position was so satisfactory that it was found that an advance of  $\frac{1}{2}$  per cent. in 1915 in the rate for fixed deposits was sufficient until July, 1920, when the rate was further raised by  $\frac{1}{2}$  per cent., and  $4\frac{1}{2}$  per cent. was allowed on deposits fixed for twelve months.

This steady position had been maintained despite the fact that a Commonwealth War Loan was placed on the local market at 5 per cent. as early as April, 1918, and previous issues had been at  $4\frac{1}{2}$  per cent., free of income tax. Later issues were made at 6 per cent., while the Savings Bank current rate had been raised to 4 per cent. The extent to which the rise in interest rates and the demand for money affected Government securities, may be seen

in the following London quotations for stocks, which also illustrate the way in which war conditions acted to hasten that general decline which had been proceeding slowly since 1896 :—

Date.	Consols (2½ per cent.)	N.S.W. Stocks (3 per cent.)
1914, 23rd July ...	75½	83
1915, July ...	65	±
1916, „ ...	60½	76½
1917, „ ...	55½	71
1918, „ ...	56	72
1919, „ ...	52	70½
1920, 30th Dec. ...	44½	58½

± Not available.

As has already been pointed out, though the volume of production had contracted in New South Wales, increased prices had warded-off the danger of a crisis, and had provided temporarily an income adequate to meet the needs of the community. This rise, so far as it operated in favour of the State, was due to an increased demand for raw materials, which fact, coupled with the scarcity of manufactured goods, led to a rapid rise in the prices of imported goods after 1916. The rise in prices was now proceeding faster against the interests of the country than in favour of them. The extent of these increases may be seen from a consideration of the index numbers of wholesale prices of the principal articles locally consumed.

Year.	Commodities of Australian Origin.	Commodities Imported.	All Commodities.
1911... ..	1000	1000	1000
1915... ..	1532	1151	1401
1916... ..	1481	1509	1489
1917... ..	1580	2003	1727
1918... ..	1675	2438	1933
1919... ..	1993	2283	2090
1920... ..	2354	2799	2503

The upward movement in wholesale prices reached its highest point in July, 1920, when the earlier fall of prices abroad, and the breaking of the drought, brought about a steady decline in wholesale prices, which in the next nine months exceeded 25 per cent.

The large increases in the wholesale prices of Australian and foreign products necessarily brought about analagous rises in the cost of living in New South Wales, and though the upward trend of the cost of living was tempered by a slight fall in rents between 1914 and 1918, the cost of the necessaries of life rose far above the pre-war level, but commenced to fall

again in September, 1920. The average retail cost of the more important food commodities and the average rents in Sydney, are shown in the following table :—

Commodity.	1914.	1915.	1916.	1917.	1918.	1919.	1920.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bread ... 2 lb. loaf	0 3·5	0 4·25	0 4·0	0 4·0	0 4·0	0 4·2	0 5·9
Beef, Sirloin ... per lb.	0 5·88	0 9·8	0 11·1	0 11·1	0 10·2	0 11·1	0 11·5
Mutton, Leg ... "	0 4·75	0 6·25	0 7·8	0 8·2	0 7·8	0 7·8	0 8·8
Butter ... "	1 2·25	1 5·0	1 5·3	1 6·7	1 7·0	1 9·9	2 4·4
Milk... per qt.	0 5·2	0 5·1	0 5·5	0 6·0	0 6·0	0 7·0	0 7·9
Sugar ... per lb.	0 2·75	0 2·85	0 3·5	0 3·5	0 3·5	0 3·5	0 5·4
Tea ... "	1 3·75	1 5·0	1 6·1	1 6·2	1 6·7	1 8·1	2 4·5
Rice ... "	0 3·0	0 3·0	0 3·2	0 3·3	0 3·4	0 5·2	0 7·4
House Rent— 5 rooms .. per week	18 7	18 0	17 11	17 10	18 6	18 11	20 8

This disconcerting rise in the prices of the necessities of life led to the institution of machinery of State to control the movement. The Government, in 1914, appointed a Necessary Commodities Control Commission to fix prices and to determine by inquiry what variations of price were justified. The Commission operated until July, 1916, when it was superseded by a Commonwealth Prices Adjustment Board under the War Precautions Act, which operated for three years, after which the original Commission was restored, and remained in existence until the creation of a Profiteering Prevention Court in January, 1921.

These authorities had power to regulate the prices of any necessary commodity, of which a very wide definition was given under the Act; but generally, it was not found practicable to fix prices of articles of clothing, other textiles, boots, and meat until 1921, nor of certain other commodities of which the quality was not determinable with sufficient accuracy to permit of grading or standardisation. Meat prices, however, were controlled to some extent after the creation of the Metropolitan Meat Industries Board, in 1916, which, among other functions, fixed the wholesale selling prices of beef, mutton, and pork in the metropolitan area. An attempt was made to extend the powers of the Profiteering Prevention Court over all classes of commodities by the provision of penalties in cases where undue profits were made or sought. The extent of these powers was tested before the Supreme Court, and the decision restricted the powers and functions of the Court.

Important measures were adopted also for the regulation of rents, which had been rising for many years. A Fair Rents Court was created early in 1915, and was given power to hear complaints concerning, and to regulate, house rents. A "fair rent," was defined generally as that existing on 1st January, 1915. Moreover, a regulation under the War Precautions Act forbade any increase in the rent of tenements occupied by dependents of any member of the Expeditionary Forces.

Partly owing to these provisions, and partly to the slackening in the demand for houses during the absence of men on service over-sea, rents did not rise above the 1914 level until 1919, when, owing to the return of the troops, an active demand sprang up, and it was found that, on account of the slackening of building operations during the war, an acute house shortage existed. This shortage in Sydney was estimated to be nearly 15,000 houses at the close of 1921, despite the fact that building operations had revived to pre-war magnitude, and rents advanced rapidly in 1920 and 1921. The difficulties were accentuated by the heavy increases in the cost of building, it being estimated that a five-roomed cottage of plain design,

which could have been built for £400 in 1914; would have cost over £700 in 1920—an increase of more than 75 per cent. This increased cost, combined with the difficult money market and the shortage of labour, restricted the operations of various Government schemes, and militated against an extension of building operations to meet the needs of the times.

Though the public wage-fixing authorities had adopted definitely the principle of basing their awards on a consideration of the cost of living, the sudden rise in the cost of the necessities of life did not find the community prepared with machinery to increase wages in the same proportion; nor did the condition of employment and industry in 1915 and 1916 favour any considerable advance in money wages, and until 1920 the average rate of wage in the State did not overtake the rise in the cost of living. Expressed in tabular form the developments with respect to wages were:—

Trade or Calling.	1915.	1916.	1919.	1920.
<i>Manufacturing—</i>	s. d.	s. d.	s. d.	s. d.
Boot clickers ... .. per week.	60 0	66 0	72 0	98 6
Tailors (Slop) ... .. "	60 0	60 0	75 0	85 0
Boilermakers ... .. "	72 0	78 0	85 6	110 6
Moulders (Iron)... .. "	72 0	72 0	85 6	110 6
Fitters and Turners ... .. "	76 0	78 0	102 6	110 6
Coppersmiths ... .. "	78 0	80 0	104 6	112 6
Electrical Fitters ... .. "	74 0	82 0	90 0	111 6
Labourers (Iron Trade) ... .. "	54 0	54 0	77 0	88 0
<i>Building, etc.—</i>				
Carpenters ... .. per week.	72 0	80 0	80 0	108 0
Bricklayers ... .. "	78 0	78 0	84 0	108 0
Stonemasons ... .. "	69 8	78 0	90 0	112 6
Plasterers ... .. "	78 0	78 0	84 0	106 0
Painters ... .. "	68 0	75 0	79 0	104 0
Bricklayers' Labourers ... .. "	54 0	60 0	68 0	95 0
<i>Rural Industries—</i>				
Boundary-riders ... .. per week, with keep.	25 0	25 0	40 0	40 0
Farm Labourers ... .. "	25 0	25 0	35 0	35 0
Milkers ... .. "	25 0	25 0	36 6	36 6
Shearers ... .. per 100 sheep shorn.	24 0	24 0	30 0	30 0
<i>Mining—</i>				
Coal-miners ... .. per ton (best coal).	4 2	4 2	5 11	6 11
Coal Wheelers ... .. per week.	56 0	56 0	78 0	93 6
Silver-miners ... .. "	70 6	74 6	80 0	101 0
Silver-mine Labourers ... .. "	57 6	63 0	68 0	87 6
<i>Females, with Board and Lodging—</i>				
General Servants ... .. per week.	20 0	20 0	25 0	25 0
Cooks ... .. "	30 0	30 0	35 0	35 0
Index Nos. Year 1911=1000—				
Nominal Wage (Adult Males) ... ..	1120	1204	1493	1828
Effective Wage (Adult Males) ... ..	888	907	994	1043
Cost of Living (Food and Rent) ... ..	1261	1328	1502	1752

Effective wages reached their lowest point in 1915, but the more or less regular living wage determinations made thereafter, and the awards of the Arbitration Courts raised the level of wages, until, following the declarations of the Board of Trade in 1918, 1919, and 1920, the average wage improved at a much faster rate than the cost of living, as measured by the prices of food and rent, and the effective wage in 1919 practically was equal to, and in 1920 rose above, the 1911 level.

The average weekly rate of wage prevailing at the end of each year and the amount of each successive living-wage declaration since 1914 are shown in the following table:—

Year.	Average Rate of Weekly Wage.	Amount and Date of Living Wage Declaration.	Year.	Average Rate of Weekly Wage.	Amount and Date of Living Wage Declaration.
	s. d.	s. d.		s. d.	s. d.
1914	56 2	48 0 (Feb.)	1918	65 11	60 0 (Sept.)
1915	57 7	52 6 (Dec.)	1919	76 9	77 0 (Oct.)
1916	61 11	55 6 (Aug.)	1920	94 0	85 0 (Oct.)
1917	64 5	*			

\* No declaration.

These adjustments and the instability of prices re-acted on labour conditions. The tendency of wages to lag behind advancing prices in the early years of the war, added vehemence to the industrial discontent, which resulted partly from other causes connected with the war, and was fostered by the continued conflict which raged around the question of wage adjustment.

The number of serious strikes within and without the mining industry grew rapidly, and occasioned frequent stoppages of now one, now another important public service. The discontent had become so general that it was not allayed by the big advance of wages in 1919. But after the further advance toward the end of 1920, and when conditions of employment became bad, dislocations of industry owing to strikes became far less frequent.

Smaller strikes had become very common, and, though the outstanding causes were wages disputes, other matters, such as questions of hours, protests against awards, employment conditions, demarcation, quantity of work, and union principles, constituted grounds for important disputes.

As a result of many causes, very disturbed conditions had prevailed generally after 1914. The continual decline in the value of wages irritated the workers, employment was more or less intermittent, and the war itself was an unsettling factor. In 1916 many unions were perturbed at the prospect of conscription for military service oversea, which they distrusted, and several one-day strikes were made in protest among the coal-miners and at Broken Hill. Moreover, politics, which had always been an important feature of union life, became embittered, and the conflict which raged around the conscription referendum towards the end of 1916, resulted in a split in the Labour movement, and following upon a coalition of the parties which had favoured conscription, the Labour party was forced to the benches of the Opposition.

The excitement engendered by these events, and the subsequent Federal and State elections of 1917, at both of which the newly-formed National party was successful, contributed further unsettling factors. Moreover, the conviction and imprisonment of thirteen prominent members of a revolutionary body in connection with the outbreak of a series of fires in Sydney in 1916, had been a matter of considerable discussion, and had caused discontent in some directions.

When, therefore, in August, 1917, the employees in Government railway workshops struck in protest against the introduction of a card system of time-recording in connection with their work, there existed, apart from the merits or demerits of the dispute, a disturbed industrial condition which had produced an atmosphere charged with trouble. Union sympathy with the railway employees was widespread, and the strike soon extended into one of unprecedented magnitude, involving in all nearly 77,000 men in an almost general stoppage of industry, and the trouble continued for two months.

The Government took a very serious view of the situation, which it regarded in the light of a challenge to its authority, and severe measures were

taken to defeat the strike. A scheme for the maintenance of industry, with the assistance of voluntary workers was devised, and considerable bodies of police were used to protect them. More than 7,000 volunteers were enrolled to carry out necessary portions of the work declined by strikers, and industry was maintained to a limited extent; the operations of the Government extended even to attempts at coal-getting under the special authority of Parliament. The community was considerably inconvenienced by a lack of transport facilities, and a shortage of gas and electricity, but these services steadily improved, and the original dispute ended after five weeks, when the railway-men returned to work. Gradually the other strikers resumed, and industrial peace was restored.

The introduction of non-unionists to carry on necessary public services, and the determination of the Government and of some private employers to retain those desirous of remaining in their new employment, led to very considerable friction, which was heightened by the fact that a number of new unions were formed in place of those which had been de-registered as a consequence of their participation in the strike.

This serious disturbance was followed in 1918 by a year of comparative peace, in which only one important dispute occurred outside the mining industry, which also was much more orderly than it had been in any year since 1912. Harmony was further promoted by the favourable turn of the war after the middle of the year, and its triumphant conclusion on 11th November.

Strenuous endeavours were being made to improve the machinery for determining industrial relationships in the State. In 1916 additional judges had been appointed to the Arbitration Court, with the view of replacing gradually the many existent Wages Boards and of bringing more order and simplicity into the many perplexing determinations which had been made. This development was further facilitated in 1918, and a Board of Trade was constituted, with wide powers of investigation into the condition of industry and commerce, and with special functions to promote harmonious relationship between employers and employees. To it was allotted the important task of determining annually the living wage for the State, and as a result of the new basis adopted and the application of the principle of granting "marginal increases" in the Arbitration Courts, the average wage rose rapidly.

Early in 1920 a claim for the abolition of Saturday work was put forward by certain unions in the building and iron trades, and, subsequently, the president of the Board of Trade was appointed Royal Commissioner to inquire into the effects which would follow from a reduction of the hours of work from the traditional 48 per week. The result of this inquiry was that the reduction in hours to 44 per week was recommended in the iron and building trades. The formation of joint councils of employers and employees in all industries was recommended as a means for the better organisation of industry, to recoup any diminution of output resulting from a reduction of working time. The abolition of Saturday work was not recommended, and in the building trades the employees abandoned the project before the end of 1920.

It had been popularly anticipated everywhere that the termination of the war would produce a speedy return to the comparatively easy economic conditions which had existed prior to 1914, and, indeed, a temporary easement of the strain did occur toward the close of 1918. But during this brief respite, as the belligerent nations strove to attain a rapid transition from war to peace, all the forces of economic disorder seemingly gathered strength.

Unrestricted competition for the small supply of commodities in world markets led to phenomenal rises in prices; the exchanges which had been

stabilised by the operations of the British Government during the war became disorganised; and in the whirl of post-war reconstruction, social discontent assumed a bitter phase, one expression of which was found in the many and widespread strikes of the period. In New South Wales, as in foreign countries, the difficulties of the situation were increased by the rapid rise in the cost of living. During the fifty-two months of war the cost of food and groceries rose by 38 per cent., while rents remained stationary. In the succeeding twenty-two months of peace the additional cost of food and groceries produced a further increase of 46 per cent., while rents advanced by 15 per cent.

The new vigour of the disturbing influences, particularly the great acceleration in the rise of the cost of living, led to greater industrial disorder. The years 1919 and 1920 produced far more and larger strikes in New South Wales than in any other period of the same duration. Operations in the mining industry at Broken Hill were practically suspended from May, 1919, until November, 1920, during a continuous strike of the six thousand miners employed there, and, when the trouble was settled finally, it was found that the low price of metals, consequent on the fall in the world's markets, rendered the resumption of operations unprofitable to the owners, and the mines remained closed.

The extent of strikes and the amount of time and wages lost during the war period, and the strenuous years which followed, are illustrated in the following table:—

Year.	Mining Industry.			Non-mining Industry.		
	Workers Involved.	Working Days Lost.	Estimated Loss of Wages.	Workers Involved.	Working Days Lost.	Estimated Loss of Wages.
			£			£
1915	66,211	576,109	308,500	28,135	162,386	74,700
1916	129,920	649,292	372,000	27,182	258,458	133,100
1917	77,147	1,184,594	730,500	67,557	1,677,001	879,400
1918	30,246	104,751	65,900	8,406	101,077	54,900
1919	86,778	2,958,056	1,990,600	36,396	713,692	420,100
1920	109,464	316,823	252,800	41,554	652,566	485,100

Amid the difficulties of this trying period trade-unionism lost none of its power in the community. Though it had reached its highest development in 1914, it is probable that the decline, except that which followed the strike of 1917, was due to enlistments. The fluctuations may be shown thus:—

Year.	Number of Unions at end of year.	Number of Unions Registered during year.	Number of Members.	Amount of Annual Income.
				£
1914	219	13	240,800	297,300
1915	219	11	230,600	267,100
1916	215	13	234,300	248,100
1917	233	45	235,400	259,400
1918	225	17	216,200	249,700
1919	213	13	229,100	286,100
1920	215	22	245,100	356,400

Though considerable activity had existed in forming new unions, the gross number did not increase permanently, for the tendency toward the formation of bigger unions through amalgamations continued, and considerable agitation for "One Big Union," or a union of all unions, was raised.

Unions of employers also grew in size, especially after the strike of 1917, and the movement toward the organisation of two more or less hostile groups of unions progressed more rapidly than ever before, and the unfortunate breach between the two became wider. Combination of interests among employers was facilitated by the operations of the Employers' Federation, which aimed at the organisation of all employers in each industry and their association under a central council, with the object of safeguarding employers' interests in their dealings with labour.

The association of allied interests industrially was an outstanding feature of this period, and in no respect was the development more remarkable than among the primary producers. The large schemes of the various Governments for marketing and purchasing primary products, and for fixing prices and wages, had each a very important effect in drawing together persons directly concerned in those industries, and their organisation was encouraged by the Government, so that the dealings might be conducted with representative and not isolated interests. This new departure was enthusiastically approved by primary producers, and organisations multiplied in all parts of the country to deal with the special problems confronting primary producers. In this way a community spirit began to grow among men on the land, which received further encouragement through the establishment of Agricultural Bureaux with Government assistance. The movement towards association among business men was also stimulated by the growing practice of collective bargaining.

During these difficult years very great activity was necessary on the part of the Government, not only in view of the very extensive regulation of industry that was undertaken, but because various urgent problems loomed large in the political situation from time to time—housing, unemployment, finance, the extension of State enterprises, the accommodation of returned soldiers, the strike of 1917, the influenza epidemic of 1919, and the drought of 1919-20; and throughout these years political feeling ran high.

In the midst of the disturbed conditions, a general election was held in March, 1920, under a system of proportional representation. Once more a third party—the Progressives—entered the political field and contested many seats. The National Government was defeated, and a Labour Government assumed office with a small majority.

The cost of Government rose continuously, and increased taxation became necessary. Revenue continued buoyant, but the large deficit of 1913 was not wiped out, although considerably reduced, and in 1920 the combined ill-effects of drought and disease increased the accumulated deficiency to £1,800,000. In the period of six years ended June, 1920, the public debt of the State grew by £40,000,000, or nearly £13 per head, raising the amount of interest payable annually by £2,500,000. In the same period the public debt of the Commonwealth rose rapidly owing to war expenditure, and the State's proportionate share in this new burden exceeded the whole of its pre-war debt. The increased burden on the people of the State is reflected in the following statement of taxation imposed per head:—

Authority Imposing Taxation.	1913-14.	1916-17.	1919-20.
	£ s. d.	£ s. d.	£ s. d.
Federal ... ..	4 0 5	5 19 0	9 6 6
State ... ..	1 8 6	1 18 4	2 8 8
Local Government ...	1 8 9	1 17 8	2 2 7
Total ... ..	6 17 8	9 15 0	13 17 9



At the close of the year 1920, therefore, it was apparent that the State was faced with the difficulties which had arisen out of but had not been caused by the war, and which had been deferred in 1914. Those difficulties were now accentuated. Prices had commenced to fall in international markets toward the middle of the year, and, as a result, the factor that had maintained the local apparent prosperity at so high a level had disappeared, and a decline became inevitable.

The primary industries had already suffered heavily in other ways. The flocks of the State had been seriously depleted in 1919-20 by the severe drought, and pastoral production had been further heavily reduced. The large stocks of wool and meat that had been held in this and other producing countries awaiting shipment during the war militated against the sales of new produce, and the pastoral industry became faced with stagnant markets. The decline in the prices of minerals led to the cessation of metalliferous mining operations, and the employees were thrown out of employment to swell the large numbers of men already seeking work. A spirit of caution replaced the previous freedom which had existed in buying, and a tendency grew among consumers to await the long-expected fall in prices, while the continued abnormality of the exchanges of the world hampered the resumption of international trade and threatened to cause a long delay in the return to normal conditions.

But important alleviating factors existed in the local situation. A very large wheat crop was harvested in 1920-21 and, with the high prices ruling, a considerable benefit resulted financially. This eased the strain caused by the difficulty experienced in marketing the wool-clip. Moreover, the general financial position was very strong, and the large accumulations of the preceding years of extraordinary prosperity were confidently expected to tide the community over the inevitable period of settling-down without undue disorders, even though that process commenced at an inopportune time, so far as concerned the condition of the primary industries.

Fortunately, the extraordinary era of prosperity which came to an end in 1920 had produced a large accumulation of wealth in the community which was bound to prove a source of great strength and to promote stability in the period of readjustment. The value of material property owned by private persons in New South Wales was estimated as follows at the dates shown:—

Year.	Value of Private Wealth.	Amount of Government Stocks held locally.	Total.	Per head of Population.		
				Private Wealth.	Government Stocks held.	Total.
	£ (millions.)	£ (millions.)	£ (millions.)	£	£	£
1891 ...	381.1	5.1	386.2	333.7	4.5	338.2
1901 ...	368.6	14.3	382.9	269.6	10.4	280.0
1906 ...	458.2	21.8	480.0	308.7	14.7	323.4
1911 ...	553.8	34.5	588.3	332.8	20.7	353.5
1916 ...	730.0	68.6	798.6	385.6	36.2	421.8
1921 ...	947.9	178.4	1,127.3	449.7	84.7	534.4

This table exhibits the effects of the financial decline between 1891 and 1901, and shows how the remarkable prosperity of the years which followed expressed itself in the accumulation of wealth by private citizens. The decline of the nineties represents rather a fall in values than a decay in material prosperity, and, on the other hand, the development of the period 1901-1921 was due partly to a rise in values. The total material assets of private citizens, however, more than trebled in the period, and increased nearly twice as fast as did the population. Exactly what part inflation of values has played in this advance cannot be estimated with accuracy, but it

is apparent that the total material wealth and the reproductive material wealth of the community grew at a considerably faster rate than the population.

It is significant, however, that a very large proportion of the accumulations of the period consists of investments in Government stocks which, in part, have as security productive works, but in large part are war stocks, backed by no material asset other than the credit of the country, and really represent a mortgage on the material wealth, and not an addition to it.

The activities of public authorities and the growing determination of the people to own and control important public utilities, and to embark on extensive industrial enterprises and other business schemes, led to accumulations of much property by the Government, and the total material assets of the State were largely augmented in that way. The growth of national wealth was as follows :—

Year.	Value of National Wealth.	Amount of National Wealth per head.
	£ (thousand.)	£
1891 ... ..	561,232	491·4
1901 ... ..	539,614	394·8
1906 ... ..	645,159	433·9
1911 ... ..	775,640	466·1
1916 ... ..	999,253	527·8
1921 ... ..	1,258,580	597·1

Such a growth affords evidence of the stable position attained by the State, especially when it is remembered that in the valuation no allowance was made for appreciation, which, in the case of extensive works such as railways and tramways, is probably very great, since their value was set down at cost of construction exclusive of maintenance.

#### *Retrospect, 1901–20.*

This lengthy period of new growth in New South Wales was, perhaps, the most eventful period of its history. It was marked by most important features of social, political, and economic development, which transformed the problems and outlook of the State. In the growth of prosperity the general standard of living rose and the standard of comfort improved as the expansion of the national income made it possible for ever-increasing numbers to save from their earnings. The extent of these savings was exhibited in the growth of bank deposits and in the accumulation of certain forms of wealth, while the accretion of land values was in large part an effect of the rapid commercial expansion. Over the whole period the value of national wealth more than doubled.

In contrast with the last decade of the nineteenth century, the first twenty years of the twentieth were marked by a rapid, though chequered, economic development. In the first ten years the productive activity of the population increased rapidly, and the natural prosperity which resulted was accentuated by a slight rise in prices. Between 1910 and 1913 production did not expand further, but prices rose, so that the value of production continued to show marked advances. The outbreak of war and the occurrence of bad seasons caused a heavy decline in productive activity from 1914 onwards; but prices rose more rapidly than ever, and the value both of production and of exports continued to increase. Thus, the prosperity of the first ten years was natural and well-founded, while that of the years which followed depended on the more or less fictitious basis of rising prices, and the unreal effects were heightened by a heavy expenditure of loan money by the various Governments.

Many important changes accompanied the uninterrupted growth of prosperity. These included a continuous rise of prices, of wages, of interest rates, of costs of all kinds, and of taxation, which, in turn, brought about a number of adjustments with far-reaching effects in finance and industry. Rising prices and the accompanying prosperity led to frequent increases in wages, which were the fruits partly of arbitration proceedings, but also of an ever-growing agitation and many strikes among wage-earners. There resulted a wide extension of industrial arbitration, including the establishment of the principle of the living wage. Unions grew and spread rapidly among all classes of employees; and trade unionism had its counterpart among organisations of professional men, of employers, and of primary producers. Consequently the tendency of men to associate in order to promote their common interests was an important feature of the period. The functions of government were extended widely into the domain of labour and industry, and into the new provinces of prices and markets, as a consequence of the economic disorganisation which resulted from the war. The rise of interest rates was induced by the growing demand for money for commercial purposes, and by the enormous vogue of borrowing during the war. This rise was accompanied by an unremitting depreciation in "gilt-edged" securities, and the basis of credits and finance was disturbed seriously.

Great changes were wrought by a number of forces in various industries. Chief among these was the extension of the manufacturing industry which was facilitated by the war. Associated with the growth of factories was a disconcerting drift of population from rural to urban localities. Moreover, though the great pastoral industry, which, for forty years, had been the chief factor in the industry of State, recovered remarkably soon from the losses which had culminated in the drought of 1902, the flocks of the State declined again after 1910; but agriculture and dairying developed and produced new growth in rural industries. With their rise, the problem of closer settlement and that of populating the interior became more insistent, and attention was turned towards means of rendering rural life more attractive and more profitable.

After the federation of the Australian states there was conceived an ideal of Australia as an economic entity which, in the limited way possible under modern conditions, should be industrially independent. This idea led to the permanent establishment of a protectionist policy in the Commonwealth, and to the building of a tariff wall in 1901, which was raised higher in 1907, 1914, and 1920. A growth in manufacturing enterprise certainly proceeded during these years, but the weight of the tariff told in increasing the cost of commodities.

The most notable events of the period resulted from the attempts which were made to hammer into workable shape the relationships subsisting between employers and employees, and to determine the correct attitude of labour to capital, and of capital to labour. The attempt to ensure economic harmony by the provision of machinery to determine and enforce industrial justice met with only partial success, principally because the unrelenting rise of prices, which continually depreciated wages, constituted a source of irritation, and produced a state of industrial ferment, which prevented the consideration of industrial problems in a calm atmosphere.

#### 1921.

As the year 1920 was the culminating point of the trade boom, which had assumed new vigour after the close of the war, 1921 was the fateful year in which the inevitable process of deflation began. In older countries, where the economic situation was more complex, the transition was sudden, and marked by serious disturbances in industry and commerce; but in New

South Wales a policy of gradual deflation was pursued; and re-adjustments to meet the new conditions proceeded without grave disorders. Although conditions of employment became bad and remained bad, the shortage of work was not generally acute for any lengthy period, and the estimated number of unemployed in the State did not rise above 15,000. Financial losses in some cases were severe; but serious disorders were avoided, and there was no appreciable increase in the number or magnitude of bankruptcies—convincing proof of an efficient commercial and banking organisation, and of the financial strength of the community. On the whole, production increased in volume, and, as this increase more than counteracted the decline in prices, the value of production was greater in 1920-21 than in any previous year. The propitious seasons which followed the breaking of the drought in June, 1920, favoured increased production, and helped to improve the difficult situation which was arising out of the decay of the unreal prosperity consequent on the general fall in prices.

The decline first affected the State through a fall in the prices realised for pastoral products and metals, of which New South Wales is a seller, and for manufactured goods, of which it is a buyer. The smaller and slower realisations on all primary products, except wheat, caused a reduction in the national income, while, at the same time, the knowledge that the level of prices was at last falling produced a spirit of caution among the buying public. Though exports declined heavily, imports, in fulfilment of long-standing orders, grew to unprecedented heights in 1920-21. Commercial houses were faced with the troublesome problem of realising on large stocks of high-priced goods on falling markets in order to meet extraordinary commitments overseas, while the purchasing power of the buying public was weakening.

As the violent developments overseas dominated the local situation, the whole industrial organisation of the State felt the influence of price variations. Prices fell steadily for two years, and by July, 1922, had reached a point approximately 30 per cent. below the highest point reached in 1920, or more than 50 per cent. above the pre-war level. The volume of trade, as shown by monetary transactions, began to shrink. Bank advances had reached their maximum in March quarter, 1921, and deposits in the following quarter; thereafter both receded gradually. A decline was also apparent in the business of the clearing house, the total of 1921 being more than 7 per cent. less than that of 1920, while progress returns for 1922 indicated a further decline. The spirit of caution in spending had its counterpart in saving, and a new growth of deposits occurred in the savings banks. These increased by £7,460,000 in 1921—nearly double the increase of any preceding year. The diminution in earning-power was exhibited in the smaller earnings of public companies, some of which arranged to return portion of their capital to shareholders.

As the result of recommendations made by the special tribunal set up in February, 1921, to consider applications for a reduction in hours of work, a 44-hour working week was proclaimed in respect of many of the important industries regulated by awards of the State courts. This matter, the question of unemployment, and of reduction in the costs of production, became topics of much discussion. A joint economic conference of representative organisations of employers and employees assembled in Sydney in 1922 to consider the problems of the day, but failed to agree on general principles, and disbanded without formulating concrete proposals for the betterment of conditions. The price of coal and its cost of production were also the subject of a subsequent conference, but agreement was not reached.

In October, 1921, the Board of Trade reconsidered the living wage, and declared in favour of a reduction from £4 5s. to £1 2s. per week, and on

further consideration in May, 1922, pronounced in favour of £3 18s. per week. Neither determination was put into effect immediately, and the average effective wage of 1921 was 12·7 per cent. above that of 1911. The reductions, however, were applied generally after the change of Government in 1922. During all these readjustments the industrial situation remained calm, and in 1921 strikes were less extensive than for a number of years previously. A number of industries, however, principally the metal and metalliferous mining enterprises, were dislocated by a fresh cause—the absence of profitable markets—and a number of establishments and mines suspended operations pending an improvement in markets or a reduction in costs of production.

With the advent of favourable seasons in June, 1920, the outlook for primary industries improved. The harvests of 1920-21 and of 1921-22 were both unusually large, and high prices were realised for wheat, the principal crop; the market for butter, after a severe decline toward the end of 1921, again improved, and production expanded; the sheep flocks rapidly recovered from the effects of the drought of 1920, and the market improved as demand increased, so that the clip of 1921 was practically disposed of by the end of July, 1922, at very satisfactory prices. The trials of the readjustment period found organisations of producers, brought into being largely by the problems of recent years, ready to take combined action in their own interests, and the disturbed state of markets led to a continuance of the war-time expedient of "pooling" produce for market. Although a free market for wool was reverted to in 1921, control of the realisation of surplus wool from previous years was handed over to a company specially formed for the purpose. The wheat-growers by ballot emphatically favoured a "voluntary pool" in connection with the harvest of 1921-22, and more than half of that harvest was entrusted to the new organisation. Butter was controlled by producers on co-operative principles, and a "fruit pool" was formed. By these means primary producers were able to exercise more control in the marketing of their products, and to obtain better prices.

The general decline of prices, wages, and employment had a marked effect on the housing problem. Owing to high costs, building activity decreased during 1921, although housing needs had not been fully met; but the increase in rents and the fall in wages led to such economy in housing accommodation that, towards the middle of 1922, the effective demand for houses slackened and notices of houses to let, which had been rare for some years, again became familiar in the columns of the press, but the rents required generally exceeded 25s. per week. At the same time reduced costs led to an expansion of building operations.

Although local rates of interest remained unchanged at a high level, monetary conditions oversea improved. Public loans were negotiated on improved terms in London. A loan of £5,000,000 issued at 95, bearing interest at the rate of  $4\frac{1}{2}$  per cent. per annum, was raised by the Government of New South Wales in 1922. The extent of the improvement is apparent from the rise in the price of Consols, which had been quoted at 44 and rose to  $57\frac{3}{4}$  in July, 1922, while New South Wales 3 per cent. stocks recovered from 58 to 77. The recovery of trade was further facilitated by a marked improvement in the exchange between London and New York.

Following upon the political crisis of December, 1921, general elections were held in March, 1922, and a change of Government was effected. The policy of the new administration included the abolition of all restrictions on trade and industry, reintroduction of a 48 hour working week, and land settlement.

## VALUATION OF WEALTH OF NEW SOUTH WALES.

### *General and Introductory.*

IN considering estimates of national wealth, it is necessary to keep in mind that, however well the work of estimating may have been done, the results are subject to important modifications, which limit their use and restrict their application. The nature of the figures and their bases must be analysed carefully before applying them in comparisons and, even before considering them absolutely, a clear idea of what they represent should be obtained.

At the outset it is obvious that no estimate of national wealth can be exact, however determined. A detailed valuation of the whole of the property of the State as a going concern is hardly possible by reason of the complexity of the task and the many difficulties involved in performing it. Again, as Sir Robert Giffen said in his "Growth of Capital" (1889), "only by a violent hypothesis can the property of a community be valued like that of an individual member of it, seeing that it is not conceivable that it can all be the subject of a sale at a given moment. In actual fact, we have to be content with something that falls very far short of such a detailed valuation, and to apply average rates of value to gross quantities either of property or income, which are themselves imperfectly determined. For certain purposes the results may be good enough, and, I believe, are good enough, but they are certainly not to be treated as sums in an account definitely ascertained, and compared one with another without attention to the nature of the data themselves, and the similarity and dissimilarity of the processes by which the results are arrived at."

Some items of the total wealth are apposite only for certain purposes, and should be excluded from consideration except with regard to those purposes. In considering such matters as the taxable capacity, or the relative position of communities, other factors such as income, population, and the nature of resources vitally affect any conclusions which may be drawn.

Although it is necessary that such estimates as these should be employed with more than ordinary care, and although they are to some degree imperfect by reason of inexactness and incompleteness, they are based on the best data obtainable, and exact enough to supply very useful material for discussion of important topics connected with public finance, as well as with the general economic condition of the community.

The principal uses which Giffen assigned to such estimates are stated below, and these may be considered to furnish a reliable guide to their proper employment, provided the data and methods utilised in different estimates are sufficiently alike to validate comparison :—

- (1) To measure the accumulation of capital in communities at intervals of some length—not less, perhaps, than ten years.
- (2) To compare the income of a community, where estimates of income exist, with its property.

- (3) To measure the burden of national debts upon different communities.
- (4) To measure, in conjunction with other factors, such as aggregate income, revenue and population, the relative strength and resources of different communities.
- (5) To indicate generally the proportion of the different descriptions of property in a country to the total—how the wealth of a community is composed.
- (6) To measure the progress of a community from period to period, or the relative progress of two or more communities, in conjunction with the facts as to progress in income, population, and the like; to apply, in fact, historically, and in conjunction with No. (1), the measures used under headings Nos. (2), (3), (4), and (5) above for a comparison at a given moment.
- (7) To compare the aggregate accumulation in a community, or that portion of the accumulation which can be described as free savings, and which is gradually invested through the agency of the stock exchange.
- (8) To throw light on the question of changes in the value of money, which are themselves among the factors to be investigated, and allowed for, in comparing the valuation of different countries, or the valuations of the same country at different times.

The method employed in the estimates here made is that known as the inventory method. Although special statistics have not been collected for it, there exist fairly complete data collected for other purposes, and from these satisfactory results have been obtained. It is, however, to be borne in mind that the data themselves are in some respects, as indicated later, imperfectly suited to the present purpose, and that any valuation of the wealth of a community must necessarily afford only approximate results. To a certain degree the results obtained are incomplete, because, in addition to certain minor items, such an important item as "goodwill" has in all cases been omitted from consideration. Lack of precision, and omissions in other directions, are probably of small extent, and it is believed that the results represent, with a near approach to accuracy, the total value of the material wealth of the community in the latter half of the years chosen. In some respects the discovery of new materials and of new facts connected with certain data employed have necessitated a departure from previous estimates, and these are explained in a special section.

The property valued in the present estimates represents the whole of the material wealth within the boundaries of the State irrespective of the domicile of its owners. It is considered afterwards how the results should be modified by reason of external indebtedness and absentee ownership, to show the value of property owned by residents of the State.

#### NATIONAL OR TOTAL WEALTH OF NEW SOUTH WALES.

The national or total wealth consists of all property within or without New South Wales owned by the people individually, communally, or through the agency of the various Governments. The amount of foreign property belonging to residents of the State is practically negligible, and no account is here taken of it. For the most part, the national wealth consists of private property, but, through the extension of Government activities to the control of large public utilities, and even into industrial undertakings in competition with private enterprise, a greater proportion of the national

wealth of New South Wales is publicly owned than is the case in most other countries, where Government activities are more restricted.

The original estimates of the national wealth of New South Wales, and, indeed, of Australasia, were made by Sir T. A. Coghlan between the years 1886 and 1904. The estimate for 1891 is here used, after adjustment, for comparison with estimates covering the years 1901 to 1921 made by the present author in 1921. No allowance is included for "goodwill," nor for churches, hospitals, or charitable institutions. The respective items in each year are as follow :—

Heading.	1891.	1901.	1905.	1911.	1916.	1921.
	£000	£000	£000	£000	£000	£000
Public Wealth ... ..	172,895	162,322	177,222	208,124	248,257	283,268
Local Government Property ...	7,241	8,723	9,697	13,700	20,981	27,382
Private Wealth... ..	381,096	368,568	458,240	553,816	730,015	947,930
National Wealth ... ..	561,232	539,613	645,159	775,640	999,253	1,258,580

The valuation of 1891 is not, properly speaking, comparable with those of later years, because in that year values were inflated temporarily on account of the financial boom which ended in a crisis two years afterwards, and produced a very large decline in the value of landed estates, which constitute important proportions of the national property. The valuation is, however, interesting historically, for comparison with 1901 reveals the extent of the deflation during the nineties. Apart from land, the values of other items of national wealth increased considerably; these are considered later in more detail. The amount of the component parts of the national wealth of New South Wales per head of population is shown below :—

Amount per Head of Population.	1891.	1901.	1906.	1911.	1916.	1921.
	£	£	£	£	£	£
Public Wealth ... ..	151·4	118·8	118·7	125·1	131·1	134·4
Local Government Property ...	6·3	6·4	6·5	8·2	11·1	13·0
Private Wealth ... ..	333·7	269·6	308·7	332·8	385·6	449·7
National Wealth ... ..	491·4	394·8	433·9	466·1	527·8	597·1

It will be observed that the new growth of wealth after 1901 proceeded at an accelerating rate, and much faster than the growth of population. To such an extent did this occur that the amount of wealth per head of population was 50 per cent. greater in 1921 than in 1901. It remains to be considered later how far this growth was due to productive effort and saving, and how far to inflation of prices and values.

#### PUBLIC WEALTH.

The public wealth of the State of New South Wales consists of a considerable number of important public works, business undertakings, industrial undertakings, and considerable areas of land. The details of the valuation



of 1921 in comparison with preceding years are as shown below, account of property of the Commonwealth Government being omitted :—

Heading.	1891.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000	£000
Railways and Tramways ...	39,975	43,272	49,683	61,207	83,027	97,459
Water Supply and Sewerage ...	4,240	8,906	10,852	13,725	17,958	22,735
Harbour Works ...	3,592	2,654	6,988	7,544	9,273	12,942
Harbour and River Improve- ments—Navigation ...		2,423	3,032	3,283	3,961	4,260
Industrial Undertakings (a) ...		...	...	1,607	2,907	5,689
Electric Telegraphs ...	744	1,265	(b)	(b)	(b)	(b)
Conservation of Water, Bores, &c.	...	900	1,287	2,638	4,967	8,129
Wheat Elevators ...	...	...	...	...	...	2,026
State Forests ...	...	...	...	...	1,400	7,000
Roads, Bridges, and Punts (a) ...	10,382	15,176	17,460	18,110	18,654	19,100
Public Buildings, Sites, and other Properties ...	6,338	9,200	8,900	11,200	13,690	16,640
Total—All Works ...	65,271	83,796	98,202	119,314	155,837	195,980
Public Lands—						
Crown Lands ...	94,400	13,300	16,800	19,000	22,200	17,300
Leased Crown Lands ...		54,920	54,200	58,900	57,000	51,900
Balance due on lands sold as Conditional Purchases	13,224	10,306	7,900	8,610	10,720	11,088
Balance due on lands sold under Closer Settlement Acts ...	...	...	120	2,300	2,500	7,000
Total Public Lands ...	107,624	78,526	79,020	88,810	92,420	87,288
Total Public Wealth ...	172,895	162,322	177,222	208,124	248,257	283,268

(a) National works only.

(b) Transferred to Commonwealth.

The estimates are based broadly on the capital cost of works, with some allowance for depreciation where it seemed that repairs and renewals could not be, or were not, made. Although it is clear that in some cases, *e.g.*, railways and tramways, very considerable appreciation has occurred in the value of the works themselves, no allowance has been made either for this item or for "goodwill." The value of roads and bridges was assessed at 80 per cent. of their capital cost, irrespective of expenditure on maintenance.

The comparison, however, reveals strikingly the magnitude of the assets of the State, and shows their growth and the extent of new undertakings of the Government during the past thirty years. The number, nature, and magnitude of new ventures included in the list, and the expansion shown in other enterprises, afford evidence of the remarkable prosperity of the period which at once demanded and enabled such expansion. Apart from the value of public lands, the total value of State Government property grew from £65,271,000 to £195,980,000, or to just treble its original amount, in the period of thirty years between 1891 and 1921. This expansion represented the investment in permanent works on State account of an average of £4,300,000 in capital each year, of which a very great part occurred in the ten years 1911-1921, when the average annual investment was some £7,500,000. This growth has been occasioned largely by the determination of the community to own, and to administer for the general good, important public utilities, and to develop by vigorous construction of public works, the latent resources of the State. Thus £57,500,000, or on the average nearly £2,000,000 per year, have been invested in railways and tramways, which are an especially important need in a country of long distances and wide spaces such as New

South Wales; £18,500,000 in water supply and sewerage works; £13,700,000 in navigation improvements; £8,100,000 in irrigation and water conservation projects; £5,700,000 in industrial concerns to supply State requirements as well as, in some cases, private needs; £2,000,000 to provide bulk handling facilities in connection with the rapidly developing wheat industry; and lesser sums for a scheme of State afforestation, a State Savings Bank, roads, bridges, and other works. And, in addition to these sums, large amounts have been invested by Local Government bodies, and by the Commonwealth Government.

As alienation of public lands has proceeded the Government domains have dwindled, and the total value as estimated has fallen from £107,600,000 to £87,300,000 (excluding inalienable forest lands), so that lands represent a diminishing asset, though the total value has been sustained by appreciation, and a considerable proportion of the proceeds of sales of land is devoted to the construction of public works.

It may be shown that, apart from the very valuable assets of alienable lands, there exist more than ample securities to cover the indebtedness of the State, even without consideration of the value of the "goodwill" of the trading concerns which, when all contrary allowances are made, must still be very great.

#### LOCAL GOVERNMENT PROPERTY.

Formerly local government bodies owning property existed only in the larger towns incorporated as municipalities, but, with the extension of local government in 1906 to the rural areas contained in shires, a new growth commenced; and, with the rise of important municipal undertakings, the value of the property owned began to assume important proportions.

The following statement of the value of the assets of local government bodies is based upon the capital value as stated in the balance-sheets of Municipal and Shire Councils. The value of water supply and sewerage works in the Metropolitan and Hunter River Districts is included in governmental property:—

Heading.	1891.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000	£000
Waterworks ... ..	377	549	665	869	1,068	1,312
Gas and Electric Lighting ... ..	164	215	558	1,129	2,961	4,629
Lands and Buildings... ..	2,254	2,192	2,194	3,596*	6,114*	7,635*
Sewerage and Sanitary ... ..	71	79	68	166	338	406
Working Plant, Furniture, Stores, and Street Lighting ... ..	90	113	102	240	400	500
Roads and Bridges ... ..	4,285	5,575	6,110	7,700	10,100	12,900
Total, Local Government Property ... .. £	7,241	8,723	9,697	13,700	20,981	27,382

\* Including extensive city resumptions.

It will be observed that a large part of the development shown in the above table has been due to expenditure on public utilities such as lighting schemes and water supply, while large additions have resulted to the value of land and buildings owned through resumptions and improvement of properties, principally in the city, and to the erection of extensive public markets. The value shown for roads and bridges represents only 80 per cent. of the cost of construction, exclusive of maintenance, and indicates in how large a measure these thoroughfares have been developed. It is noteworthy that the value of local government works nearly trebled in the fifteen years which succeeded the extension of the system to its present scope.

#### PRIVATE WEALTH.

As has been stated, estimates were made of the private wealth of New South Wales at frequent intervals between 1886 and 1904 by Sir T. A. Coghlan, and the same authority published estimates of the private wealth of Australasia for the years 1813, 1838, 1863, 1890, and later years. He also formulated estimates of the private wealth of New South Wales since 1838, the bases of the first estimates being necessarily scanty. In the year 1915, a wealth census was taken under direction of the Commonwealth Government as a war measure, and the Commonwealth Statistician included in his report of this census an estimate of the private wealth of all of the Australian States, based on the inventory method. The present investigation was made because 1921 was a census year, and because it appeared desirable to have at the present time such a survey of the wealth and progress of New South Wales. The valuations were made as at intervals of five years from 1901.

The following is a summary of the growth of all privately owned wealth within the borders of New South Wales (irrespective of the domicile of the owner) since 1838, no account being taken of Government stocks held by private citizens nor of goodwill:—

Year.	Value of	Per head of
	Private Wealth.	
	£000	£
1838	18,200	195
1863	69,400	187
1891	381,096	334
1921	947,930	450

The real economic development of New South Wales did not begin until after 1863, but, having begun, it proceeded at an astonishing rate until, in the early nineties, the climax came and the movement seemed to fail by excess of its own momentum. This failure produced financial and economic depression which, towards the end of the century, was aggravated by the occurrence of prolonged droughts while, in addition to the deflation of values which had already taken place, more particularly in land—the largest item—and mining property, a further fall in values occurred, and by reason of bad seasons, flocks and herds diminished. Though recovery began at the end of the century it had not proceeded far when, in 1902, another calamitous season temporarily retarded progress. But a very rapid improvement in economic conditions followed, and, in the remarkable era of prosperity which then commenced, the material bases of wealth showed, on the whole, a continual growth. This growth of wealth, measured in terms of money, was exaggerated to a considerable extent by reason of a steady rise in prices until 1916, and thereafter until 1920 by more rapid inflation of values due to war conditions.

VALUATION OF THE WEALTH OF NEW SOUTH WALES. 675

Resolving the estimates for 1891 and later years into their component parts, a very interesting comparison is provided, as follows:—

Item of Wealth.	Estimated Value.					
	1891.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000	£000
(1) Land (unimproved value) ...	157,128	112,895	137,101	169,232	209,078	263,363
(2) Houses, &c., and other permanent improvements	128,300	151,798	182,549	213,057	289,715	392,073
(3) Live Stock ...	35,187	31,937	45,553	41,999	70,670	51,347
(4) Coin and Bullion ...	9,726	8,780	10,679	15,879	12,618	10,918
(5) Merchandise ...	14,730	27,190	35,393	47,268	63,924	105,297
(6) Private Railways ...	425	584	569	968	1,136	1,510
(7) Mines and Mining Plant ...	9,330	6,960	8,470	10,120	10,950	13,500
(8) Machinery and Implements ...	9,723	10,448	14,135	19,777	26,395	43,107
(9) Shipping ...	1,910	2,528	2,875	2,910	5,152	5,332
(10) Household Effects, Vehicles, &c. ...	14,637	11,845	16,091	26,450	31,680	48,416
(11) Personal Effects ...		3,603	4,825	6,166	8,697	13,067
Total Private Property ...	381,096	368,568	458,240	553,816	730,015	947,930

The next statement shows the equivalent rates per head of the values in the above table:—

Item of Wealth.	Estimated Value per head.					
	1891.	1901.	1906.	1911.	1916.	1921.
	£	£	£	£	£	£
(1) Land (unimproved value) ...	137·6	82·6	92·4	101·7	110·5	124·9
(2) Houses, &c., and other permanent improvements ...	112·3	111·1	123 0	128·0	153·0	186·0
(3) Live Stock ...	30·8	23·4	30·7	25·2	37·3	24·4
(4) Coin and Bullion ...	8·5	6·4	7·2	9·5	6·7	5·2
(5) Merchandise ...	12·9	19·9	23·8	28·4	33·8	50·0
(6) Private Railways ...	·4	·4	·4	·6	·6	·7
(7) Mines and Mining Plant ...	8·2	5·1	5·7	6·1	5·8	6·4
(8) Machinery and Implements ...	8·5	7·6	9·5	11·9	13·9	20·4
(9) Shipping ...	1·7	1·8	1·9	1·8	2·7	2·5
(10) Household Effects, Vehicles, &c. ...	12·8	8·7	10·8	15·9	16·7	23·0
(11) Personal Effects ...		2·6	3·3	3·7	4·6	6·2
Total Private Property ...	333·7	269·6	308·7	332·8	385·6	449·7

The valuation of 1891, depending for its magnitude so much on the inflated and unsustained values of land, houses, and mining properties, does not present a suitable point at which to begin a comparison. In a valuation made at the close of 1898, Sir T. A. Coghlan alluded to the general decline in values which had taken place after 1893, and the estimate made in 1898 reduced the total value assigned to land and improvements and mining properties by £46,365,000.

Recovery had already begun in 1898 and by 1901 prosperity had re-appeared and had in some measure re-established values.

The following table shows, at decennial intervals, the proportion of each item to the total, and consequently affords an analysis of the manner in

which the private wealth is constituted, showing changes in the composition over a period of thirty years :—

Item.	1891.	1901.	1911.	1921.
1. Land (Unimproved Value) ... ..	41·2	30·6	30·5	27·8
2. Houses and other Permanent Improvements ...	33·7	41·2	38·5	41·3
3. Live Stock ... ..	9·2	8·7	7·6	5·4
4. Coin and Bullion ... ..	2·6	2·4	2·9	1·2
5. Merchandise ... ..	3·9	7·4	8·5	11·1
6. Private Railways ... ..	·1	·1	·2	·2
7. Mines and Mining Plant... ..	2·4	1·9	1·8	1·4
8. Machinery and Implements ... ..	2·6	2·8	3·6	4·5
9. Shipping ... ..	·5	·7	·5	·6
10. Household Effects, Vehicles, n.e.i., &c. ... }	3·8 {	3·2	4·8	5·1
11. Personal Effects ... ..		1·0	1·1	1·4
Total ... ..	100·0	100·0	100·0	100·0

The outstanding feature of the growth of wealth in the past thirty years has been that, while the proportion of wealth, which depends on the accretion of land values, principally as an indirect result of human efforts, has declined, those items which increase directly as the result of the expenditure of human energy have grown. More especially is this the case with the value of stocks of merchandise and of household and personal effects. It is, however, noteworthy that the proportion occupied by machinery has substantially increased, but that of live stock has decreased. The tendency has been for the proportion of productive property to remain fairly constant. It was greatest in 1901, and least in 1921.

On the whole the composition of the private wealth has changed little since 1901. Land has become an item of less importance, and permanent improvements to land continue to occupy easily the most important place. The relative values of trading stocks and machinery have increased considerably, while live stock, metallic currency, and mines have expanded at a rate slower than the average. Household and personal effects, illustrating the growth of domestic and personal comforts, have increased considerably.

#### *Rate of Accumulation of Private Wealth.*

It is apparent from the table already given on page 675 that very great increases occurred in the value of private property after 1901, and that these increases have been progressively great. The following table shows the extent of these increases in intervals of ten years and during the last twenty years :—

Heading.	1891-1901.	1901-1911.	1906-1916.	1911-1921.	1901-1921.
Private Property—	£	£	£	£	£
Increase £000 ... ..	(-)12,527	185,247	271,775	394,114	579,361
Increase per cent. ... ..	(-) 3·9	50·3	59·3	71·2	157·3
Private Property—excluding Land—					
Increase £000 ... ..	31,706	128,910	199,798	299,983	428,893
Increase per cent. ... ..	14·1	50·4	62·2	78·0	167·7

(-) Decrease.

Over the whole period of twenty years (1901-1921) accumulation proceeded, not only at a very rapid rate, but at a constantly accelerating rate, so that the total private wealth grew by more than one and a half

times its original dimensions, while population grew by little more than one-half. When the mere accretion of land values is omitted from consideration, the growth of material property depending on saving and the expenditure of human energy is seen to be greater still.

#### WEALTH AND DEBT

Though a large proportion of the wealth of the State has doubtless been accumulated by the investment of profits in expanding the businesses which produce them, or in other works, the agencies or persons who accumulate wealth by monetary savings, *e.g.*, in banks, frequently do not convert them into material wealth by direct investment, but by lending. Indeed, it has been found, naturally enough, that in this young country where so much developmental work has been required, that the accumulations of the population have not been sufficient to provide adequate funds for all the investments either public or private which have offered, although the proportion of local capital invested has grown very considerably. Hence it is clear that external liabilities have been incurred, not only by the Government in constructing its extensive works, but also by private entrepreneurs in the ordinary course of their business in raising capital; moreover, a considerable number of English and some companies of other countries have established extensive works in the State. The liabilities to foreign persons thus arising constitute an important offset to the amount of wealth owned by residents of the State amenable to its laws and subject to its taxes; in addition they divert a certain proportion of the income produced in the State to destinations overseas.

The following table provides a summary of the relationship between national wealth and the public debt of New South Wales during the past thirty years. It omits from consideration the share of Commonwealth Government property and public debt (other than war debt) which would be attributable to the State on a population basis. Neither item is extensive, and were both taken into account it is probable that a small sum of net assets would be credited to the State. As the Commonwealth war debt is in a different category from other debts, and is not offset by any tangible assets, the State's share in it (on a population basis) is shown separately in order to reveal the effects of the war on the financial condition of the community.

The value of Government stocks and Commonwealth bank-notes privately held in New South Wales was not included in the estimate of private wealth, but has been added and shown in column (3) of the statement.

Year.	(1) National Wealth (excluding Property of Commonwealth Government).	(2) Private Wealth.	(3) Private Wealth plus Government Stocks* and Bank Notes held locally.	(4) Public Debt (including Closed Settlement Debentures, 1921).	(5) External Public Debt.
£ (million).					
1901	539·6	368·6	382·9	70·3	56·0
1906	645·1	458·2	480·0	88·9	67·1
1911	775·6	553·8	592·2	100·7	66·2
1916	999·3	730·0	{ 817·5† 800·2‡	{ 168·5† 139·2‡	{ 100·0† 88·0‡
1921	1,258·6	947·9	{ 1,148·0† 1,038·6‡	{ 319·2† 177·9‡	{ 140·8† 108·9‡

\* At face value. † Including State's proportion of Commonwealth War Debt. ‡ Excluding War Debt.

Comparison with the year 1891 is hardly valid on account of the unstable condition of values in that year, proved by the severe decline which followed the financial crisis of 1893. It is, therefore, omitted from consideration, and the year 1901, when the revival was beginning, is taken as the starting-point.

This statement of the financial position of the State in relation to its public debt is, of course, in the nature of an approximation, because, as already pointed out, estimates of wealth are not exact, and are, to some degree, imperfect. The comparison, however, is sufficiently accurate to permit valuable general conclusions to be drawn from it, although in the absence of full particulars of the amount of property in the State owned by non-residents, the summary of the position cannot be made complete. It is certain, however, that the amount of private external indebtedness has diminished markedly in the past thirty years. This question will be considered further under the heading "Absentee Ownership."

A comparison between columns (2) and (3) of the above table reveals the growth of Government indebtedness to private citizens individually and corporally, and indicates the important amount of private wealth constituted thereby. Whereas this debt amounted in 1901 to £14,200,000, it grew by 1921 to £90,700,000, excluding £109,400,000 of Commonwealth war stocks held in New South Wales. Thus assets whose face value was £185,800,000 were accumulated in twenty years by private citizens by acquiring Government stocks, including bank notes, and of this sum £161,700,000 were accumulated in the ten years 1911-1921.

The total accumulation of assets by private citizens in the twenty years 1901-1921 was approximately £765,100,000, of which £555,800,000 was accumulated in the ten years 1911-1921, or an average of £29 per inhabitant per year. This figure, however, must be received with some caution. Its magnitude is due in some measure to inflation of values, and not entirely to productive effort and saving. The extent to which it should be modified in considering the growth of wealth apart from inflation is considered later.

Of a total sum of £1,258,600,000 representing the national wealth in 1921, no less than £1,038,600,000, or nearly 82 per cent., was owned privately or represented security for private investments in Government stocks, excluding from account the extensive investment in Commonwealth war and other stocks against which no material assets are shown.

Comparison of these items for discussion is best made by consideration of the relationships shown in the following table :—

Year.	Proportion per cent. of—				
	Public Debt to National Wealth.	Public Debt to Private Wealth.	External Public Debt to Private Wealth plus Government Stocks and Bank Notes held Locally.	External Public Debt to National Wealth.	External Public Debt to Private Wealth.
	(1)	(2)	(3)	(4)	(5)
1901	13·1	19·2	14·6	10·4	15·2
1906	13·9	19·5	14·0	10·4	14·7
1911	13·0	18·3	11·2	8·5	12·0
1916	{ 16·9†	{ 23·2†	{ 12·2†	{ 10·0†	{ 13·7†
	{ 14·0‡	{ 19·1‡	{ 11·0‡	{ 8·8‡	{ 12·1‡
1921	{ 25·4†	{ 33·7†	{ 12·3†	{ 11·2†	{ 14·8†
	{ 14·1‡	{ 18·8‡	{ 10·5‡	{ 8·7‡	{ 11·5‡

† Including State's proportion of Commonwealth War debt.

‡ Excluding War debt.

Consideration of the above table brings out a number of very important facts, among which are—

- (i) Excluding the war debt, the total public debt of New South Wales in 1921 was not quite one-seventh of the total national wealth, but, including the war debt, it was rather more than one-fourth of the national wealth. Much of the public debt, however, is owed to residents of the State, and the external public debt (excluding the war debt) is only one-twelfth of the total value of the national wealth, or, including the external war debt, only one-ninth of that value.
- (ii) The additional debt placed upon the State as a result of the war was approximately one-ninth of the value of the whole of its property in 1921, while the State's proportion of the cost of the war to June, 1921 (£191,500,000), was equivalent to 15 per cent. of its total wealth at that date. However, the excess of the State's share in the war debt over the amount of war debt owing to its citizens was only one-fortieth part of its total national wealth in 1921.
- (iii) The public debt of the State and Local Governments has grown very little faster in the past twenty years than the national wealth. In 1901 it was in the proportion of 13·1 per cent., and in 1921, 14·1 per cent. of the national wealth.
- (iv) Excluding the war debt, the amount of external public debt actually decreased between 1901 and 1921 in proportion to the national wealth from one-tenth part to one-twelfth. Including the war debt, the ratio of external public debt to national wealth was little greater in 1921 than in 1901 or 1906. The reduced ratio of external public debt to national wealth, brought about by economy during the years 1906 to 1911, was maintained by various other factors between 1911 and 1921.
- (v) Between 1901 and 1921 the ratio of external public debt (excluding the war debt) to the total private wealth declined heavily from 15·2 per cent. in 1901 to 11·5 per cent. in 1921, or to 14·8 per cent. including the war debt.
- (vi) The total public debt owed abroad is one-ninth part of the national wealth in the State.

In estimating the national wealth of New South Wales, and allocating it between public and private ownership, account was not taken of the amount of public debt owed to private citizens though it is an income-producing asset. If account be taken of this factor, which has grown to important dimensions, very considerable modification must be made in considering the ratio of private wealth to the amount of public debt owed abroad. Considering the private wealth plus the amount of investments by citizens in Government securities as a measure of the concrete accumulation of capital by private effort in the State, an excellent comparison may be made with the growth of external public debt (column 3). The comparison reflects a very satisfactory condition of affairs.

The development of the past twenty years within the State has been such that private citizens have accumulated wealth at a much faster rate than the State incurred external public debt. Excluding the external war debt, the ratio of public debt owed abroad to private wealth plus local holdings of Government securities diminished from 14·6 per cent. in 1901 to 10·5 per cent. in 1921, indicating the effects of the rapid growth of prosperity during the period. Even including the external war debt the total external indebtedness of the State in 1921 was only 12·3 per cent. of the total of private wealth plus local investments in Government securities.

It is necessary to note, however, from column 2, that the total public debt bears a very high ratio to private wealth. Excluding war debt, this ratio



has remained fairly constant at about 19 per cent., but the large expenditure for war purposes, which, it must be remembered, produced no tangible assets, increased the ratio of public debt to private wealth to 33·7 per cent.—a rather formidable proportion even in face of the important modifications already alluded to above.

#### WEALTH AND TAXATION.

Wealth considered as the ultimate source of income constitutes the base on which taxation depends. The relationship of taxation to wealth, considered as a source of revenue is, therefore, of very great importance, not only in considering questions of public finance, but also in considering the general economic position of the community.

The total taxation imposed on the State has grown at a remarkable rate in the last twenty years, and more especially in the last ten years and since the war. Dissection of taxation according to authorities imposing it, and the amounts yielded by specific taxes, are shown on page 199 of this Year Book. An important item of public expenditure has been payment of interest on the public debt, and this is made the subject of special treatment.

The following comparison traces the relationship between the wealth of New South Wales, the amount of taxation, and the interest paid on the public debt:—

Year.	National Wealth, excluding Property of Commonwealth Government.	Private Wealth.	Private Wealth plus Government Stocks and Bank Notes held Locally.*	Annual Taxation Imposed in State.‡	Annual Interest Liability on Public Debt.
£ (million.)					
1901	539·6	368·6	382·9	3·86	2·76
1906	645·1	458·2	480·0	5·41	3·46
1911	775·6	553·8	592·2	8·78	3·87
1916	999·3	730·0	{ 817·5† 800·2† }	17·26	{ 5·49† 5·19† }
1921	1,258·6	947·9	{ 1,148·0† 1,038·6† }	35·60	{ 15·29† 8·14† }

\* At face value.

† Including State's proportion of War Debt.

‡ Excluding War Debt.

§ By State, Commonwealth, and Local Governments.

Since taxation constitutes a charge on either property or income, and since wealth is the ultimate source of income, a comparison between private wealth and taxation is relevant. For other purposes it is instructive to consider the relationship between the annual amount of interest on the public debt, and the value of national and private wealth. Such a comparison is made below.

Year.	Proportion per cent. of Annual Taxation to Private Wealth, including Government Stocks and Bank Notes.	Proportion per cent. of Annual Interest on Public Debt—	
		to National Wealth.	to Private Wealth.
1901	1·01	·51	·75
1906	1·13	·55	·75
1911	1·48	·53	·70
1916	{ 2·12† 2·15† }	{ ·52† ·55† }	{ ·71† ·75† }
1921	{ 3·10† 3·42† }	{ ·65† 1·21† }	{ ·86† 1·61† }

† War stock being included.

‡ War stock being excluded.

It is noteworthy that a very considerable proportion of the taxation levied in the State is returned to the community as income derived from personal exertion. This return takes the form of salaries to persons employed by the State, Commonwealth, and Local Governments (exclusive of those engaged in industrial and business undertakings); old-age, invalid, and war pensions; and payments for various services rendered to the State by private individuals.

The remarkable growth of taxation has proceeded at a faster rate than the growth of private property, the proportion having practically trebled since 1901, and having more than doubled since 1911. Very little of this increase has been necessitated by increased interest charges on the ordinary public debt. The interest on war debt has accounted for a very considerable part of the increase, but most of this interest is paid to residents who are also taxpayers.

#### ABSENTEE OWNERSHIP.

Consideration of the wealth of the State should take into account not only the public debt owned abroad, but the amount of private property in the State, whose owners reside beyond its borders.

The following estimate of the value of assets in New South Wales, owned by persons not resident in Australia is deduced from the Report of the War Census of 1915, pages 28 and 39:—

Assets in New South Wales of Non-Residents.					Value.
					£
Individuals	...	...	...	...	4,433,686
Partnerships	...	...	...	...	592,034
Companies	...	...	...	...	48,052,445
Total	...	...	...	...	53,078,165

This statement, however, is exclusive of the interests of non-residents in trust estates, and in that respect is an understatement, while the value of company assets owned by non-residents is probably overstated in view of the assumptions from which it is deduced (see pages 28 and 39, Report of War Census of 1915). On the whole, from the Wealth Census report, omitting account of trust estates, it is apparent that rather less than 10 per cent. of the private wealth of New South Wales was owned abroad in 1915.

If this proportion be applied to the private wealth as estimated in 1916, and the amount of external public debt be added, the following statement of the net wealth of New South Wales in 1916 is obtained:—

	Total Wealth in £ million.	External Debt or Wealth owned abroad in £ million.	Net Wealth in £ million.
Public Wealth* ...	269·2	{ 100·0† 88·0‡	{ 181·2† 169·2‡
Private Wealth ...	730·0	73·0	657
National Wealth..	999·2	{ 173·0† 161·0‡	{ 838·2† 826·2‡

\* Including Local Government.

† Including External War Debt.

‡ Excluding External War Debt.

Thus, in 1916, the proportion of national wealth owned abroad or offset by external public debt was 17·2 per cent., excluding account of war debt and 16·0 per cent., account being taken of war debt.

The following statement shows the amount of external public debt of New South Wales in comparison with the internal public debt, no account being taken of the small amount of Commonwealth debt other than war debt :—

Public Debt.	1901.	1906.	1911.	1916.	1921.
£ (million.)					
Internal ... ..	14·3	21·8	34·5	{ 68·5† 51·2‡	{ 178·4† 69·0‡
External ... ..	56·0	67·1	66·2	{ 100·0† 88·0‡	{ 140·8† 108·9‡

† Including War Debt.

‡ Excluding War Debt.

An approximate idea of the value of certain private property owned by absentees in more recent years can be deduced from returns of some of the principal items of wealth. At 30th June, 1918, lands in New South Wales, with a total improved value of £163,452,000, were assessed under the Federal Land Tax Act; of these a value of only £2,903,700 or 1·8 per cent. of the total was owned by absentees, *i.e.* persons not resident in Australia.

An estimate of the total gross income of absentees (excluding companies) paying Federal Income Tax, in respect of investments in New South Wales in 1918, indicates that the total gross income of individual absentee taxpayers was in the proportion of about 1·6 per cent. to the total gross income of resident individual taxpayers.

Regarding earlier years, the amount and place of origin of the paid-up capital of Australasian investment companies, between 1899 and 1912, were estimated by Mr. R. L. Nash, and published in various issues of his "Australasian Joint Stock Companies' Year Book." It is, unfortunately, not practicable to formulate from these any estimate of the actual amount of capital invested in joint-stock companies operating in New South Wales, and to allocate it according to place of origin; but the following table has been compiled, and is deemed to reflect accurately the ratio of Australasian to foreign capital invested by companies in New South Wales :—

Year.	Proportion per cent. of Company Capital subscribed in—	
	Australasia.	Abroad.
1901 ... ..	45	55
1906 ... ..	50	50
1912 ... ..	64	36

A complete analysis of the domiciliary ownership of the wealth of New South Wales cannot be made, but it is clear that the proportion of the property in the State locally owned has grown more rapidly than the combined proportions of the external debt and of the property of the State

owned abroad. This result has been brought about not only by the remarkable amount of saving in the community in the past twenty years, but also, in a considerable degree, by the withdrawal of British capital from Australian investments during the years which followed the financial crises at the end of last century, and latterly by the effect of dual taxation in discouraging such investment. However, in the past twenty years, local investments have been nearly as great as foreign investments in the Government stocks of New South Wales where the influence of dual taxation is not felt.

Private property in New South Wales belonging to non-resident individuals is not extensive, apart from the very considerable sums of money invested from abroad through the agency of joint-stock companies. These investments are probably greatest in manufacturing undertakings and financial institutions, but in respect of land they are insignificant.

#### DISTRIBUTION OF WEALTH.

Particulars of the distribution of wealth as represented by the general term "net assets" are available from the wealth census of 1915, and from probate returns. In addition, certain particulars of the allocation of the largest items of wealth—land and permanent improvements thereto—may be deduced from the reports of the Commissioner of Federal Taxation, and from the statistical returns collected annually by the Government Statistician of New South Wales.

The best idea of the general distribution of the wealth of the State may be obtained from the results of the war census of 1915. Under the Act authorising that census returns were required from all persons 18 years of age or more possessed of property or receiving income either as individuals or as members of trusts, companies, or associations. The value of the results of this census for purposes of comparison with the present estimates is lessened by two important considerations—(1) the returns credited to New South Wales relate to the wealth of residents of the State irrespective of the location of their wealth; (2) it was not possible to secure complete returns nor returns of assured accuracy owing to the special circumstances under which the census was taken. However, the results arrived at may be considered to show with precision the value and disposition of the wealth of the State during the year ended 30th June, 1915.

Exclusive of the value of (i) interest in trust estates, (ii) assurance and annuity policies, (iii) prospective benefits from friendly societies and trade-unions (three items which were included in bulk under "trust funds"), the aggregate net assets of individuals in the year ended 30th June, 1915, recorded in respect of New South Wales were as follow:—

Individuals.	Males.	Females.	Total.
	£	£	£
Resident ... ..	362,193,858	106,750,464	468,944,322
Non-resident ... ..	2,252,941	2,180,745	4,433,686
Total ... ..	364,446,799	108,931,209	473,378,008*

\* The total wealth returned, inclusive of companies, was £646,000,000.

Distributed according to the grades of value of estates, the net assets of individuals resident in New South Wales on 30th June, 1915, as shown in the above table, were as follow :—

Grade of Wealth.				Persons.		Aggregate Assets.	
				No.		£	
Deficit and Nil ...	...	...	...	135,809		...	
Under £100 ...	...	...	...	339,658		10,412,151	
£100 and under	£250...	...	...	111,480		17,814,900	
£250	£500...	...	...	72,297		25,546,241	
£500	£750...	...	...	34,489		20,982,898	
£750	£1,000...	...	...	19,912		17,219,622	
£1,000	£2,500...	...	...	44,517		69,612,302	
£2,500	£5,000...	...	...	18,741		64,996,702	
£5,000	£10,000...	...	...	9,125		63,075,571	
£10,000	£15,000...	...	...	2,807		39,896,198	
£15,000	£20,000...	...	...	1,238		21,340,764	
£20,000	£25,000...	...	...	687		15,427,892	
£25,000	£50,000...	...	...	1,156		33,423,067	
£50,000	£75,000...	...	...	329		20,114,398	
£75,000	£100,000...	...	...	113		9,753,426	
£100,000 and upwards	...	...	...	198		39,328,190	
Total ...	...	...	...	792,556		468,944,322	

From the age distribution at the census of 1911 it is estimated that there were, in New South Wales, probably 353,000 persons above the age of 18 years from whom no returns were received. This number included probably 280,000 females, most of whom were married or otherwise dependent, and about 70,000 males, a large number of whom were in military camps, or were dependent, or partly dependent, pending completion of their education or apprenticeship, or through some disability.

The following table shows clearly the distribution of wealth between the various groups of persons recorded as having incomes at the wealth census of 1915 :—

Grade of Wealth.	Persons Making Returns.		Aggregate Assets.		Average Assets per Return.
	Number.	Proportion per cent. of Total.	Amount.	Proportion per cent. of Total.	
Nil ...	135,809	17·1	£ ...	...	£ ...
£1-£500 ...	523,435	66·1	53,773,292	11·5	102·7
£500-£5,000 ...	117,659	14·8	172,811,524	36·8	1,468·7
£5,000 and more ...	15,653	2·0	242,359,506	51·7	15,483·4
Total ...	792,556	100·0	468,944,322	100·0	604·3

This statement, however, must be modified to some extent if account be taken of assets in the nature of prospective benefits acquired by contributions for assurance and annuity policies, or to friendly societies. In 1915 there were in force in New South Wales 181,671 assurance policies for amounts equal to £43,520,335, plus bonus additions of £5,710,858, and 178,705 members of friendly societies whose accumulated funds amounted to £1,876,827. These benefits belonged, in a large measure, to persons whose wealth did not exceed £500, and although the present worth of the insurance policies was considerably less than their face value, the amounts involved

were sufficiently large to modify the above table. Inclusive of these sums the total amount of trust funds recorded in New South Wales was £114,245,620.

Turning to the distribution of wealth between sexes, the comparisons may be amplified. About 77 per cent. of the total assets were possessed by males, and 23 per cent. by females. The net individual assets of males and females who had attained their 18th birthday and were resident in New South Wales on 30th June, 1915, are stated in the following table :—

Category.	Males.		Females.	
	No.	Aggregate Assets.	No.	Aggregate Assets.
		£		£
Deficit and Nil. ...	97,731	...	38,078	...
Under £100... ..	209,892	6,778,032	129,766	3,634,119
£100 and under £250 ...	73,886	11,847,614	37,494	5,967,286
£250 „ £500 ...	48,037	17,013,903	24,260	8,532,338
£500 „ £750 ...	22,860	13,960,232	11,629	7,022,666
£750 „ £1,000 ...	13,595	11,763,474	6,317	5,456,148
£1,000 „ £2,500 ...	31,148	49,016,305	13,369	20,595,997
£2,500 „ £5,000 ...	14,172	49,304,480	4,569	15,692,222
£5,000 „ £10,000 ...	7,233	50,189,620	1,892	12,885,951
£10,000 „ £15,000 ...	2,248	27,111,542	559	6,784,656
£15,000 „ £20,000 ...	1,008	17,323,116	230	4,017,648
£20,000 „ £25,000 ...	572	12,900,114	115	2,527,778
£25,000 „ £50,000 ...	989	33,767,772	167	5,655,295
£50,000 „ £75,000 ...	295	18,034,840	34	2,079,558
£75,000 „ £100,000 ...	108	9,312,967	5	440,459
£100,000 and upwards ...	173	33,869,847	25	5,458,343
Total... ..	524,047	362,193,858	268,509	106,750,464

It is estimated, on the basis of the age-distribution of the census of 1911, that on 30th June, 1915, residents of New South Wales of the age of 18 years and upwards numbered approximately 618,000 males and 555,000 females. Some of the reasons for the apparent deficiencies in the number of returns are explained above. Of the men not making returns many were receiving old-age or invalid pensions, of which there were 18,727 in force, and most of the remainder were probably in military camps preparing for active service abroad, or were dependent on parents for support. Considering the returns furnished by males as being fairly complete, it is apparent that 97,731, or 18·7 per cent., of those in receipt of incomes possessed no assets, and that 55·9 per cent. of the wealth owned by males belonged to 2·4 per cent. of the males in receipt of incomes. But this conclusion is subject to some qualification in view of the influence of the distribution of trust funds alluded to above.

The impression of the accumulation of a large part of the private wealth in the hands of comparatively few persons is heightened by reference to the probate returns which record particulars of the value of estates of persons during each year. An analysis of these returns is published in Part "Private Finance," of this Year Book. It is there shown that, in the ten years ended June, 1921, considering only persons who possessed estates at death, 73 per cent. of the persons who died in New South Wales possessed only 10 per cent. of the property valued for probate purposes, while 2·75 per cent. possessed 53·29 per cent. of the property valued. The degree of this inequality would be very much increased by the inclusion of persons who died not possessed of any estate. From the tables there published it is apparent that in recent years the number of small estates has increased very much, and that wealth is now more widely distributed in small amounts, as more than 70 per cent. of the adult males who died in 1920-21 possessed estates.

## WEALTH AND PRICES.

As already indicated, a very considerable proportion of the growth of wealth, as expressed in terms of money, has been caused by the rise in prices and values during the past twenty years. However, to what extent this growth has been due to increasing prices it is very difficult to say, since the variations so caused cannot be determined accurately. Especially is this difficulty encountered with regard to land and permanent improvements thereto, which constituted in 1921, 61·5 per cent. of the total wealth. The value of real estate has increased under the influence of three factors, the extent of whose individual application it is not practicable to determine. These factors are (a) the general decline in the purchasing power of money, or the standard by which value is measured; (b) the increment of value resulting either from the growth of the community and the consequently increased pressure on the means of subsistence, or from such factors as seasons, or improved means of access, or improved markets; (c) the energy of its occupiers in using it to obtain more profit, as in mining, or in transforming pastoral to agricultural lands, or the advent of improved facilities for exploiting it, such as irrigation. Actual improvements made to land increase in value in much the same way, though the decreases due to depreciation are greater.

These difficulties combine to render it an almost impossible task to adjust the monetary value of wealth in such a way as to show the aggregate increase in its material bases, apart from the rise in prices. It is not relevant merely to decrease the value of wealth in proportion to the fall in the purchasing power of money as determined by reference to the wholesale prices of a limited number of articles of merchandise, as merchandise is a comparatively small part of the wealth of the country.

Some idea of the influence of prices may be obtained from the following comparison of index numbers, the level of the year 1911 being taken as base and called, 1,000 in each case:—

Year.	Index Number of—			
	National Wealth.	Private Wealth.	National Wealth, less External Public Debt.	Wholesale Prices, Sydney.
1901	696	665	682	904
1906	831	827	815	955
1911	1,000	1,000	1,000	1,000
1916	1,288	1,318	{ 1,262+ 1,283+ }	1,489
1921	1,623	1,711	{ 1,576+ 1,621+ }	1,956

† Deducting external war debt.

‡ Not deducting external war debt.

The wholesale price index number is a measure of the general rise in the value of representative kinds of merchandise in its primary condition, or at all events, before manufacture has proceeded to an advanced stage, and it is, therefore, not strictly applicable as a measure of rise in values generally, although for purposes of comparison it is interesting.

## WEALTH OF VARIOUS COUNTRIES.

Although comparison of the wealth of various countries does not provide an exhaustive survey of their condition, it is, considered in conjunction with

facts relating to population, distribution, income, indebtedness, and development, a very good measure of the economic position at a given date.

In comparing the wealth of nations, it is necessary not only that the estimates made should have bases sufficiently alike to produce results which represent approximately the same items in the same way, but also to take into account the differing circumstances of each country which affect the comparison. Thus, in comparing the private wealth of New South Wales with that of foreign countries, it is necessary to keep in mind the fact that very extensive public utilities and trading concerns are here state-owned, which, abroad, are in private hands, and for this reason the private wealth of New South Wales is comparable with that of other countries only for certain purposes. In considering resources generally, national wealth and not merely private wealth should be compared, and regard should be paid to the growth of population, stage of development reached, and the income-producing power of the component items of the wealth.

The economic predominance of New South Wales among Australian States, evident in other ways, was also made apparent in the estimates of private wealth made by the Commonwealth Statistician (Mr. G. H. Knibbs) in 1915. The following table shows the total amount of private wealth, the proportion and the amount per head of population in each Australian State on 30th June, 1915:—

State or Territory.	Total Private Wealth.*	Proportion per cent. of Total Wealth of Australia.	Wealth per head of Mean Population, 1915.
	£000		£
New South Wales ... ..	660,800	40·80	349·7
Victoria ... ..	454,109	28·04	317·2
Queensland ... ..	209,653	12·94	302·3
South Australia ... ..	134,011	8·27	306·1
Western Australia... ..	107,118	6·61	333·7
Tasmania ... ..	51,300	3·18	261·3
Northern Territory ... ..	1,944	·12	449·6
Federal Territory ... ..	582	·04	235·8
Australia ... ..	1,619,517	100·00	324·9

\* Exclusive of holdings of Government Stock.

The following comparison of the wealth of the principal countries of the world was derived mainly from a paper read by Sir Josiah Stamp before the Royal Statistical Society in May, 1919.

The figures quoted in the original paper relate presumably to the national wealth of each country, except Australia, where the estimate shown is for material private wealth only. In view of the very large amount of Government property, even when allowance is made for external debt, this comparison does not convey an adequate idea of the value of Australian national wealth. In this respect the table compiled by Sir Josiah Stamp has been modified for reproduction here.

The amount shown below for New South Wales represents approximately the value of all wealth owned by residents of the State or its Government. It has been estimated on such a basis as to make it comparable with the estimates for other countries. It includes an allowance for the value of churches, hospitals, and charitable institutions, while a deduction has been made to allow for private property owned abroad, and for external public debt, so that the result is deemed to represent very nearly the value of the



net assets owned by the State and its residents at the date shown, exclusive of goodwill :—

Country.	Probable Limit of Error in Estimate.	Estimated National Wealth, July, 1914.	
		Total.	Per Head of Population.
	per cent.	£ (million.)	£
New South Wales ... ..	10	734	392
United States... ..	10	42,000	424
Argentina ... ..	30	2,400	340
United Kingdom ... ..	10	14,500	318
France ... ..	20	12,000	303
Canada... ..	20	2,285	300
Germany ... ..	20	16,550	244
Sweden ... ..	30	940	168
Holland ... ..	30	1,050	167
Italy ... ..	30	4,480	128

This comparison, it should be noted, does not purport to be more than an approximation, since adjustments were made in most cases by its author, in order to place the original estimates on a uniform basis as regards items included and date. The limit of error in each case, except New South Wales, was assigned by him to indicate the degree of approximation involved in the original estimate and in the adjustment.

It is apparent that, making all due allowances for indebtedness, New South Wales was richer on a population basis at the outbreak of war than any of the leading countries of the world, except America. It should be recollected, however, that about 30 per cent. of the total wealth consists of land at its unimproved value, and as much of this land is not utilised to the full advantage, the power of this wealth to produce income is correspondingly diminished. This consideration detracts from the impression that the wealth of New South Wales is such that it can readily bear increased burdens of taxation or debt. Moreover, in considering taxable capacity and kindred topics, it must be remembered that New South Wales is in a somewhat weaker position than countries where the proportion of public to national wealth is not so great. However, as regards security for a public debt it is clear that New South Wales is in an advantageous position.

#### DETAILS OF ESTIMATES.

##### *Methods Employed.*

The methods adopted in making the present estimates of the private wealth of New South Wales embody features of both the census and inventory methods. The returns collected annually of live stock, private railways, and the various classes of machinery amount to a census, the registration of shipping provides a complete classification of the tonnage of all vessels registered in the State, and the local government assessments provide at frequent intervals a record of the values of most of the land and the permanent improvements thereon. In other directions there exist ample data for the formulation of estimates whose precision is worthy of a large degree of confidence.

A survey of the whole field of private wealth to be covered led to its division into eleven principal headings, corresponding very closely to those used in previous years. Those divisions were: (1) Land, (2) Permanent Improvements to Land, (3) Live Stock, (4) Coin and Bullion, (5) Merchandise, (6) Private Railways, (7) Mines and Mining Plant, (8) Machinery and Implements of Trade, (9) Shipping, (10) Household effects, Books, Vehicles,

etc., (11) Clothing and other Personal effects. Each heading has been subdivided into its component parts, and, where possible, the quantity measurement of the goods valued is stated.

The question of valuation has involved no little difficulty, as it has been essential to obtain a uniform basis for goods of widely different natures. Where such are obtainable, the exchange values of typical specimens in a normal market at the time of the valuation have been adopted, and applied to the whole class of goods, or to appropriate subdivisions of the class; where valuations were directly obtainable these were checked and adopted with such adjustments as were deemed necessary to make them serviceable to the present purpose, and, where neither quantity nor value was ascertainable, indirect methods were adopted as explained below.

For the years 1891 and 1901 the existing estimates were adopted almost in their entirety, but, where the discovery of new materials made it necessary, modification was made to place the whole of the estimates on a uniform basis.

An analysis of the results obtained for each of the principal classes of goods for which estimates have been made is shown below, together with particulars of the quantities on which these are based, where such are available. These estimates represent the value of property in private hands in New South Wales, irrespective of debts owed abroad. They relate to material wealth only, omitting all consideration of good-will.

#### *Land and Improvements.*

By far the greater part of the private wealth of the State consists of that great expanse of land with which nature and the constitution have endowed its citizens, and of the fixtures and other permanent improvements which man has placed upon it for his comfort and profit.

Most of the important towns are incorporated as municipalities, and the whole of the land and improvements in them are valued at frequent intervals for purposes of Local Government rating, so that fairly complete particulars of the improved and unimproved values of urban lands are available for many years past. In 1906, the whole of the Eastern and Central land divisions were divided into Shire Areas for purposes of Local Government, and the whole of the lands—including those of unincorporated towns—were valued. These valuations have been revised from time to time, usually only on an unimproved basis, but in some cases the improved value has also been assessed, and a continuous basis of valuation has thereby been provided for the whole of the lands and improvements privately owned in the State, except the relatively unimportant lands of the Western Division and Murrumbidgee Irrigation Areas, which are practically all held on lease from the Crown, and therefore are readily assessable.

The unimproved capital value of land as assessed for local government purposes is defined as "the capital sum which the fee-simple of the land might be expected to realise if sold under such reasonable conditions as a *bonâ-fide* seller would require, assuming that the actual improvements thereon had not been made," and the improved capital value as "the capital sum which the fee-simple of the land might be expected to realise if sold under such reasonable conditions as a *bonâ-fide* seller would require."

The following lands were exempt from payment of rates, and are not included in the valuations:—Commons, public parks and reserves, cemeteries, public hospitals, and all places used only for public charitable purposes, churches, unoccupied Crown Lands, and lands vested in the University of Sydney. Lands used for purposes of railways or tramways and certain lands belonging to the Sydney Harbour Trust were also exempt until 1919. The assessments therefore include certain Crown properties, but property of the Federal Government is not taxable, and this, with all property in the Federal Territory within New South Wales, is excluded from these valuations.

The first valuations of lands contained in shires were adopted by the Local Government Commission in 1906 from returns supplied by the Land Tax Department. In many cases the value of improvements was shown, but these were allowed to lapse, except by a few shires.

The nature of valuations by Local Governing bodies is such as to render them unfit for direct use as the actual market values of the property which they represent. It is well known that assessments for Local Government purposes have been considerably below the market value of the land and improvements they cover; but, while the assessors in each area usually strove to appraise all real estate at substantially the same proportion of its real value, it is not likely that in the absence of a central controlling authority, the margin was uniform throughout the State. This circumstance detracts much from the reliableness of these valuations as a basis for determining true value, for the range of aberration has been found in recent years by the Valuer-General of New South Wales to be surprisingly great.

Considerable difficulty, therefore, has been experienced in determining the adjustments which should be made to assessments by Local Governing bodies in order to arrive at the actual market values of real estate. There exist no statistical data for determining them and a census would probably be ineffective in this regard. For the year 1921, however, the actual market values of the property contained in thirty municipalities and six shires were obtained from the records of the Valuer-General, and these afford fairly complete particulars concerning the municipalities of Sydney and Newcastle, and the Shires of County Cumberland. Apart from these, such adjustments were made as the facts of each case seemed to require.

It was found that in some cases, the assessments had actually been lowered between 1906 and 1911, and between 1911 and 1916, although land values did not decline generally and development was continuous. After consultation with the Valuer-General, careful adjustments were made based on the experienced opinion of that expert, on the facts elicited by recent valuations and on other facts of each case.

In 1921, where assessments of municipalities, made by the Valuer-General, were available these were adopted; in other cases, 25 per cent. was added to the improved and unimproved values of the municipalities in the metropolitan area, 33 per cent. in the Newcastle area and 20 per cent. in other country municipalities. These additions represent the average predominant rates of increase made by the Valuer-General. No additions were made to the valuations of the City Council. The total adjustments represented an increase of approximately 11 per cent. to the assessed unimproved values and 14 per cent. to the assessed values of improvements. The adjustments made to assessments of municipalities in earlier years were in all cases smaller than in 1921.

In the case of shires the procedure was different. It was deemed necessary to add 25 per cent. to the assessed unimproved values of all shires in 1921, in order to arrive at fair market values; but, in earlier years, the divergence was deemed to be smaller and the proportionate additions were therefore less. Generally speaking, the improved values of shire lands were not assessed except in 1906. This assessment, however, and the cases where in later years certain shires assessed both improved and unimproved values, together with the experience of the Federal Land Tax Department indicated conclusively that, where a considerable number of cases were considered, the improved value was generally equivalent to almost twice the unimproved value. This experience was so general that it was deemed sufficient to warrant an estimate of the value of improvements on that basis. In 1921, the adjustments made to the valuations of shires represented an increase of approximately 25 per cent. to the assessed unimproved values, and this adjustment

includes average increases of 59 per cent. made by the Valuer-General in six shires.

Although the assessments of the Valuer-General have been subjected to considerable lay criticism, they have generally been sustained when appealed against in the Land Valuation Court. For the most part the lands valued are among the richest and most rapidly developing in the State, and due allowance has been made for this in determining the average increase necessary in making adjustments.

For 1901 the assessed values of the City of Sydney have been adopted as market values, but otherwise the estimate of Sir Timothy Coghlan for that year which added 10 per cent. to the assessed values of municipalities has been followed. The areas subsequently embraced within shires and the Western Division were originally valued in the light of assessments made for purposes of the State Land Tax. In view of the nature of those valuations and the uniformity of subsequent experience, it was deemed necessary to revise the value of improvements shown for them in 1901, and to set it down at approximately the same value as the land unimproved.

On these bases the actual unimproved values of lands (including assessed Crown Lands, but excluding lands exempt from rating) within Local Government boundaries in New South Wales were estimated to be as follows, in the years specified:—

Divisions.	1901.	1906.	1911.	1916.	1921.
Municipalities—	£000	£000	£000	£000	£000
City ... ..	20,208	20,432	23,940	31,169	35,887
Suburbs ... ..	21,542	21,306	29,835	41,663	56,741
Country ... ..	16,228	16,483	22,340	27,359	36,349
Total ... ..	57,978	58,221	76,115	100,191	128,977
Shires—					
Cumberland ... ..	64,417†	2,770	3,821	6,422	9,814
Other Coastal ... ..		18,741	22,974	26,905	38,225
Other Country ... ..		68,169	81,522	93,510	112,747
Total ... ..	64,417	89,680	108,317	126,837	160,786
Grand Total ... ..	122,395	147,901	184,432	227,028	289,763

† Estimated Unimproved Capital Value of areas subsequently incorporated.

The value of improvements on these lands was estimated to be as follows:—

Divisions.	1901.	1906.	1911.	1916.	1921.
Municipalities—	£000	£000	£000	£000	£000
City ... ..	23,162	26,103	31,581	49,096	67,704
Suburbs ... ..	34,929	39,747	43,598	74,011	107,355
Country ... ..	25,624	27,218	30,777	42,221	67,094
Total ... ..	83,715	93,068	105,956	165,328	242,153
Shires—					
Cumberland ... ..	64,283†	2,195	5,349	8,992	13,642
Other Coastal ... ..		19,255	22,974	26,905	38,225
Other Country ... ..		66,031	78,478	89,490	108,253
Total ... ..	64,283	87,481	106,801	125,387	160,120
Grand Total ... ..	147,998	180,549	212,757	290,715	402,273

† Estimated Capital Value of Improvements of areas subsequently incorporated.

To ascertain the total value of land and its improvements for New South Wales there must be added to these results the value of land and improvements in the unincorporated areas, which comprise the whole of the Western Division (excluding those small areas incorporated as municipalities) and the Murrumbidgee Irrigation Areas where extensive private rights exist. The Western Division comprises 80,318,708 acres or 40·4 per cent. of the area of the State. Its land, however, is of inferior quality occupied mainly in large pastoral holdings on a long lease tenure from the Crown, at very low rentals. Its actual value has never been assessed, but from the best information available its average unimproved value (freehold) was estimated to be four shillings per acre and its total improvements to be worth about two shillings per acre. Owing to the peculiar conditions obtaining with regard to these lands, this valuation has been adopted throughout the period. Although its stock-carrying capacity has declined, the fall in the purchasing power of money has tended to offset the decline by increasing values. For the purpose of this valuation, private rights to this land were valued at the annual rental capitalised at 5 per cent. plus the value of all improvements privately owned and of lands held on a freehold tenure, returns of which were collected in 1921.

Special particulars of the value of private property in the Irrigation Areas were made available at considerable trouble by the Resident Commissioner. These related to the years 1916 and 1921.

The estimated values of private rights and of privately-owned improvements to land in the unincorporated districts of New South Wales were as follows (excluding in 1901 the lands which in 1906 became shires):—

Heading.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000
Unimproved value ...	5,400	2,900	2,700	3,450	4,080
Value of improvements ...	8,800	8,900	9,200	9,300	9,600
Total ...	14,200	11,800	11,900	12,750	13,680

The estimated market value of Government property included in the assessments of local governing bodies was as follows:—

Heading.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000
Unimproved value ...	4,000	3,900	4,900	5,700	10,600
Value of improvements ...	7,000	6,900	8,900	10,300	19,800
Total value ...	11,000	10,800	13,800	16,000	30,400

Deducting these amounts, those owing to the Government on conditional purchases of land and by settlers under the Closer Settlement schemes, and the values of mining properties assessed, the total value of all land and

improvements privately owned within New South Wales was estimated to be as follows :—

Year.	Value of—			Value per head of Population.		
	Land (unimproved)	Improvements.	Land and improvements.	Land (unimproved)	Improvements.	Land and im- provements.
	£000	£000	£000	£	£	£
1901	112,895	151,798	264,693	82·6	111·1	193·7
1906	137,101	182,549	319,650	92·4	123·0	215·4
1911	169,232	213,057	382,289	101·7	128·0	229·7
1916	209,078	289,715	598,793	110·5	153·0	263·5
1921	263,363	392,073	655,436	124·9	186·0	310·9

It is not possible to give complete particulars of the growth in the material bases of these forms of wealth, but the following table affords some idea of the development :—

Year.	Area of land placed beyond State control (by alienation).	Area of land under all forms of cultivation.	Number of occupied dwellings.
	thousand acres.	thousand acres.	
1901	61,960	2,774	252,502
1906	65,778	3,522	...
1911	79,468	4,749	332,841
1916	81,532	7,042	...
1921	82,903	6,281	433,420

#### *Live Stock.*

Accurate returns of the number of live stock in the State are collected annually from individual owners, and the detailed classification shown in these returns permits the application of values with a large degree of precision. Details of the sexes and other conditions of each class of stock, so far as they are available, have been published yearly in the "Statistical Register." It is necessary here to repeat only the total number of stock of each kind at the date of the estimate in order to show the variation in the bases of this form of wealth irrespective of value :—

Year.	Horses.	Cattle.	Sheep.	Pigs.
1901	486,716	2,047,454	41,857,099	265,730
1906	537,762	2,549,944	44,132,421	243,370
1911	689,004	3,194,236	44,947,287	371,093
1916	719,542	2,405,770	32,600,729	281,158
1921	663,178	3,375,267	33,851,828	306,253

The values of these flocks and herds have been estimated by reference to a considerable volume of data. For 1901 the values used are the same as those adopted in the previous estimate. For 1906, values have been determined by reference to sales recorded in the fat stock market, and to other sales and farm values as reported in various publications. For the years 1911, 1916, and 1921, these methods have been improved upon, and expert opinions, based upon recorded sales of store stock, were supplied by a number of stock salesmen in a large way of business, and their estimates were found to be in substantial agreement. By this means values were determined for each class of stock for which numerical data are available.

In estimating these values efforts were made to ascertain such a fair market price as would represent the average value of each class of animal were it sold under normal market conditions existing at the date of the valuation. The values prescribed by the Federal Department of Taxation for use in compiling their returns were rejected as an unsuitable basis of valuation for an estimate of private wealth, because they were not varied with changing market conditions, and do not necessarily represent the values of stock at any particular period. There are in the State a considerable number of blood stock of various kinds, consisting of animals whose values range to very high limits. What these values are it has not been possible to determine accurately, and, although the item is of considerable magnitude, allowance has not been made for the special values attaching to pure-bred stock as such.

Sheep have been valued on a shorn basis, an allowance for the value of the wool they carried being included in the value of the wool clip under the heading "Merchandise."

The weighted average value per animal in each year is shown below :—

Class of Stock.		Average value per animal.				
		1901.	1906.	1911.	1916.	1921.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Horses	...	8 0 0	10 15 5	13 10 8	14 3 5	12 13 8
Cattle	...	5 18 0	5 0 3	3 15 9	11 0 8	6 11 5
Sheep	...	0 8 0	0 11 10	0 8 10	1 0 2	0 11 3
Pigs...	...	1 7 2	1 3 0	0 16 0	1 13 0	2 5 0

The values of live stock attained their maximum during the war period. In 1916 the value of horses was high on account of the agricultural activity of that year and the demand for war purposes, while the prices of cattle and sheep were high in consequence of the favourable meat and wool markets. After the war terminated the meat and wool markets collapsed and by June, 1921, values had receded. It is noteworthy that, in 1911, when cattle, sheep and pigs were more numerous than at other normal times, prices were in each case lower than usual.

The aggregate values ascertained for each class of stock and for other live stock and poultry were :—

Class of Stock.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000
Horses	3,901	5,792	9,325	10,193	8,413
Cattle	10,421	12,783	12,108	26,529	22,167
Sheep	16,743	26,198	19,807	32,912	19,203
Pigs	359	280	297	464	689
Poultry and other Live Stock.	513	500	462	572	875
Total	31,937	45,553	41,999	70,670	51,347
Value of Live Stock per head of population	£23·4	£30·7	£25·2	£37·3	£24·4

The value of the live stock of the State is a very variable item, being affected very markedly by such changeable factors as seasons and markets. Though stock were numerous in 1911 as a result of successive bountiful

seasons, values were low and the total value less than in 1921 when flocks and herds had been considerably decreased by a succession of unfavourable seasons.

#### *Coin and Bullion.*

The coin and bullion in the State are distributed under two main headings, viz., that held by banks in connection with their business, and that in the hands of the public.

Returns of bank holdings are published quarterly and these show the average holdings for each quarter of the year. Since the particular dates chosen for this estimate have been at the end of a quarter, the averages of the quarters preceding and succeeding the date have been assumed to represent the holdings on the day required, where special returns on that day were not available.

The average bank holdings of coin and bullion in New South Wales thus determined were :—

Period.	Amount.
31st December, 1901 ... ..	6,394,889
31st December, 1906 ... ..	8,143,262
31st December, 1911 ... ..	12,666,638
30th June, 1916 ... ..	11,520,000*
30th June, 1921 ... ..	9,262,542†

Considerable quantities of gold formerly held by the trading banks are now held by the Commonwealth Treasury in Melbourne as a reserve fund against the issue of Australian notes.

The amount of coin in the hands of the public is difficult to assess. Early estimates of this item were reviewed in the "Official Year Book of New South Wales," 1905-6, at page 556, where the face value of gold, silver, and bronze coin estimated to be in the hands of the public at the end of 1905 was 33s. 10d. per head of population. It may safely be assumed that that amount held good at the close of 1906. An estimate by the Deputy Master of the Perth Branch of the Royal Mint determined the average amount of silver and bronze coin in active circulation in the Commonwealth at the close of 1906 at 5s. 11d. per head of population, as compared with 6s. 2½d. per head in New South Wales in the estimate at the end of 1905.

For 1901 the estimate made by Sir T. A. Coghlan has been adopted, and the amount of coin in active circulation (*i.e.*, in the hands of the public) in New South Wales at the close of the years 1901 and 1906 may be set down as follows :—

Coin.	1901.		1906.	
	Total.	Per head of Population.	Total.	Per head of Population.
	£	£ s. d.	£	£ s. d.
Gold ... ..	1,966,800	1 8 7	2,070,600	1 7 7½
Silver ... ..	384,100	0 5 7	424,400	0 5 8
Bronze ... ..	34,400	0 0 6	40,800	0 0 6½
Total ... ..	£ 2,385,300	1 14 8	2,535,800	1 13 10

After 1910 the currency of New South Wales underwent a transformation which proceeded in three ways :—(1) Australian notes were issued to replace private bank-notes, gold was gradually withdrawn from circulation and practically disappeared by 1915 owing to war conditions; (2) an Australian silver and bronze currency was issued and the gradual replacement of British silver coins was begun; (3) a rapid growth commenced in the face value of bank-notes and token coinage in circulation.

\* Approximately.

† Actual holdings at end of June.



The withdrawal of gold from circulation was at first very gradual. Its rate is not capable of accurate measurement, but it is probable that, by the end of 1911, withdrawals had not been of appreciable extent, and, as issues of gold coin had shown a small decline in the preceding five years, it would seem reasonable to assume that the amount of gold coin in circulation was slightly less at the end of 1911 than in 1906, or, say, equivalent to £1 7s. 6d. per head of population, or £2,294,000 in all. By June, 1916, the withdrawal of gold coin from active circulation was practically complete, and it is probable that the quantities hoarded were of insignificant value. Gold coins had not been re-issued for circulation in 1921.

The face value of silver and bronze coin in active circulation may be determined more definitely. Two methods are available for 1921, and, as these are in close agreement, one of them was used to find results for 1911 and 1916 with an adjustment determined by reference to the surrounding facts, and a deduction made in 1921. These methods are:—

- (i) Particulars are available of the annual issues and withdrawals through the Sydney Branch of the Royal Mint of British silver coins since 1879, and of British bronze coins since 1868. As the metallic value of these currencies is less than their face value, it is not probable that they have been taken out of the country in any appreciable quantities, as gold coins are. It is, therefore, a fair conclusion that the excess of issues over withdrawals of these coins, together with an addition to cover the amount of coin current at the beginning of the period; less an allowance for the quantities lost or taken out of the country, should give, with some degree of accuracy, a result equivalent to the total currency. The adjustments to cover currency at the beginning of the period and losses and exports may be determined approximately for 1921, by the second method, and these have been adopted with necessary modification for the years 1911 and 1916.
- (ii) By 1921 the issues of Australian coinage had been so great, and the withdrawal of British silver coins had proceeded so far, that the British coins current amounted to but a small proportion of the Australian coinage issued, all of which was recent and none of which had been withdrawn. What this proportion was could be determined only by tests, made by counting a number of coins sufficiently large to permit of reliable generalisation. Several tests were carried out, at the request of the author, the largest being conducted by the Chief Accountant of the Department of Railways and Tramways and by the Superintendent of Tramway Traffic. It was found that the proportion of British silver coins of each denomination of two shillings and under was fairly uniform, the average proportion being 21 per cent. of the total number and 20 per cent. of the total value. There are no Australian half-crowns in circulation, but the face value of British half-crowns current in New South Wales at 30th June, 1921, was estimated at about £10,000.

The face value of British silver coins current in New South Wales in June, 1921, was estimated by reference to the proportion they bear to Australian silver coins, at £414,000. Between 1879 and 1921, the excess of issues over withdrawals of British silver coins in New South Wales was £396,000, and the difference between the two amounts—£18,000—was assumed to be the total face value of British silver coins current in 1879, minus losses of currency subsequent to 1879. The face value of silver coin current in New South Wales in 1879 is estimated at £219,000, so that apparently silver coin of a

total face value of about £201,000 was either lost or taken out of the State and not recorded in the period of forty-two years between 1879 and 1921.

From these premises and other data available the following estimates were made of the silver coin in circulation in New South Wales on the dates shown :—

Period.	In Hands of Public.	In Banks.	Total.
	£	£	£
31 December, 1901...	384,000	345,000	729,000
31 December, 1906...	424,000	407,000	831,000
31 December, 1911...	852,000	450,000	1,302,000
30 June, 1916 ...	1,016,000	496,000	1,513,000
30 June, 1921 ...	1,451,000	599,000	2,050,000

With regard to the face value of bronze coin in circulation, the process of estimation is similar. Up to the 30th June, 1921, there had been no withdrawals of this form of currency. The total issues of British bronze coin from 1868 to 1921 were valued at £106,450, and of Australian bronze coins from 1910 to 1921 at £89,629, making a total issue of £196,079, which represents the total circulation if a deduction be made for coins lost, destroyed, and taken abroad during a period of fifty-three years. Since all Australian coins are of recent issue, some idea of the extent of this deduction may be derived by ascertaining the ratio of British to the total bronze coins in circulation in 1921, and estimating therefrom the total face value of bronze in circulation. This proportion was determined, by counting, to be 33 per cent. of the total in the case of pence and 27 per cent. in the case of half-pence, which would indicate a total bronze currency of £130,600 at 30th June, 1921. Approximately, therefore, £65,479 of bronze coins, plus the amount current in 1868, had disappeared from circulation in New South Wales in a period of fifty-three years.

Summarising these results, the following estimates of the face value of the currency of New South Wales are derived, particulars being also shown of the paper currency :—

Nature of currency.	In hands of.	1901.	1906.	1911.	1916.	1921.
		£000	£000	£000	£000	£000
Gold ... ..	{ Banks ...	6,040	7,724	12,202	11,006	8,637
	{ Public ...	1,967	2,071	2,294	...	...
Silver ... ..	{ Banks ...	345	407	450	497	599
	{ Public ...	384	424	852	1,016	1,551
Bronze ... ..	{ Banks ...	10	12	15	17	26
	{ Public ...	34	41	66	82	105
Total metallic currency ...	.....	8,780	10,679	15,879	12,618	10,918
Bank notes ... ..	Public ...	1,500	1,462	401	85	70
Australian notes ...	{ Banks ...	...	...	2,124	13,661	12,098
	{ Public ...	...	...	1,742	5,330	9,570
Total paper currency ...	...	1,500	1,462	4,267	19,076	21,738
Total currency ... ..	...	10,280	12,141	20,146	31,694	32,656

The amount of bank notes current and the amount of Australian notes held by banks have been estimated from the statutory returns of the banks, and the amount of Australian notes in the hands of the public of New South Wales is assumed to be 40 per cent. of the amount in the hands of the public of the Commonwealth.

Although much may be said in favour of assessing token coinage—silver and bronze—at its intrinsic value, it is considered that an estimate based on face value is best suited to the purposes of the present investigation.

The amounts per head of population of currency in the hands of the public shown in the above table were as follow :—

Nature of currency.	1901.	1906.	1911.	1916.	1921.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Gold ... ..	1 8 7	1 7 7½	1 7 6	...	...
Silver ... ..	0 5 7	0 5 8	0 10 4	0 10 9	0 14 8½
Bronze ... ..	0 0 6	0 0 6½	0 0 9½	0 0 10	0 1 0
Total metallic ...	1 14 8	1 13 10	1 18 7½	0 11 7	0 15 8½
Total paper ...	1 1 9	0 19 6	1 5 8½	2 17 2	4 11 5½
Grand total ...	2 16 5	2 13 4	3 4 4	3 8 9	5 7 2

#### Merchandise.

The quantity of merchandise in the State awaiting consumption or export represents a very substantial addition to the material wealth of the community. It consists mainly of agricultural produce, pastoral produce, mineral products, locally manufactured goods, and imported goods. The quantity of certain of these goods in the State varies according to the particular time of the year chosen for the estimate. Thus, while practically a complete wheat crop is in the State on 31st December, on 30th June stocks are approaching exhaustion; while the shearing season is only beginning on 30th June, and the season's wool is still on the backs of most of the sheep, a considerable portion of the clip has usually been exported by 31st December, and a new clip is growing on the sheep. Stocks of other principal commodities are fairly uniform throughout the year.

Statistics of the total value of goods locally produced and imported are compiled annually, and from these the following estimates of the stocks of merchandise in the hands of merchants and producers in the State on the dates shown have been compiled :—

Class of Goods.	December, 1901.	December, 1906.	December, 1911.	June, 1916.	June, 1921.
	£000	£000	£000	£000	£000
Agricultural Produce ... ..	4,392	5,639	7,309	4,370	5,000
Wheat in Pool ... ..	...	...	...	9,500	6,940
Wool ... ..	6,048	9,300	8,842	11,063	12,387
Local Manufactures ... ..	7,607	11,265	17,448	21,997	43,224
Coal ... ..	363	389	530	550	1,512
Imports Oversea ... ..	8,780	8,800	13,139	16,444	36,233
Total ... ..	27,190	35,393	47,268	63,924	105,297
Per head of Population ...	£19·9	£23·0	£28·4	£33·8	£50·0

Such an estimate as this is necessarily arbitrary, because only a census of stocks could elicit the information required for an accurate statement. The method followed is substantially that used by Mr. G. H. Knibbs in 1915, and is derived from American sources. It has been assumed that on 31st December 75 per cent. of the agricultural production of the season is being handled or awaiting disposal, and that at 30th June the work done in preparation for the crops of the season is worth 33 per cent. of the total farm value of the crops produced. On 30th June, 1916 and 1921, considerable stocks of wheat were held in pool pending sales oversea, and the value of these stocks is added in those years. The value of pastoral produce takes into account only one commodity—wool. Stocks of meat, tallow, hides, butter, &c., are probably not extensive, and are in part included in the value of stocks of local manufactures. Sheep have been valued on a shorn basis, and it has been assumed that, at 31st December, 66 per cent., and at 30th June, 90 per cent., of the wool clip represents private wealth within the State. Mineral products, except coal, are usually marketed or smelted with little delay, and no allowance is made for them, except in so far as they are included under the heading, "local manufactures." It has been assumed that a quantity of coal, equivalent to one-sixth of the year's production, is, at any part of the year, at the pit-head, in course of transit, or in the hands of dealers.

With regard to articles manufactured locally, it has been ascertained that the value of materials on hand awaiting treatment represents, normally, about 21·5 per cent., and the value of unsold stocks on hand about 5 per cent., of the value of all materials used during the year. It is deemed, therefore, that a proportion of the output of the year—equivalent to one-third of the total value of the output of factories privately owned—is in the hands of manufacturers as raw materials or as manufactured or partially manufactured articles, or in the hands of wholesale and retail dealers. The value of imported goods in stock is estimated to be 50 per cent. of the value imported during the year preceding the date of the estimate, and gold having been shown under the heading, "Coin and Bullion," is here excluded.

The total is deemed to represent approximately the value of stocks of raw materials and manufactured goods of all kinds in New South Wales on the dates specified.

#### *Private Railways.*

In the absence of particulars of sales it is impossible to determine the fair market value of private railways existing in New South Wales. Particulars, however, are collected annually, which show the total amount of capital expended on each line in existence. Although the amount, as representing the value of private railways, must be modified by considerations of appreciation and depreciation, it may be assumed to supply an approximate indication of the value of these permanent dividend producing investments, especially if the growth of private wealth be considered as a process of accumulation.

The following particulars of lines extant at the date of each estimate are available :—

Private Railways.	1901.	1906.	1911.	1916.	1921.
Number ... ..	4	3	8	8	8
Length in miles... ..	84	81	142	143	172
Value* (or capital expended) £	584,020	569,140	958,298	1,136,213	1,510,000

\* Excluding Hexham-Minmi line, included with mining property.

In a number of cases the rolling-stock used on these lines is hired from the Government, and this, of course, has been excluded. The above lines are open to the public for general traffic; some of them are used in addition for the conveyance of coal, and their value has been deducted from the estimated values of coal-mining properties.

#### *Mines and Mining Plant.*

Complete statistics of the value of mining properties have never been collected in New South Wales, and the work of valuing mining properties for the purpose of an estimate of private wealth presents very great difficulties. Section 153 of the Local Government Act, 1919, provides a means of assessing the unimproved capital value of mines, based on their output. The results yielded, however, can be of little utility for the present purpose. Statisticians have, from time to time, propounded methods of valuing mining properties based on the average output, but this method gives results which are governed by the recurrent depressions and booms of mineral markets, which affect production more markedly than they affect actual values. This objection applies with even greater force to any valuation made by capitalising dividends paid, or net earnings. Each of these methods has been tested and rejected as unserviceable for an estimate which takes into account only values of material goods, and therefore excludes "goodwill."

One practicable method which produces results, on which reliance may be placed, is to estimate the amount of actual capital invested in the industry, and to adopt this as a fair valuation with such allowance for over-capitalisation, appreciation, and depreciation as the circumstances may warrant. For this purpose the paid-up capital of each mining company in existence and the value of mining properties not owned by companies must be ascertained.

The only statistics officially collected with regard to mining properties over a period of years relate to the values of plant and machinery used in operating mines. These are shown below:—

Plant and Machinery.	1901.	1906.	1911.	1916.	1921.
	£000.	£000.	£000.	£000.	£000.
Metalliferous Mines* ...	2,017	2,345	3,850	3,876	3,542
Coal Mines ...	910†	1,079	1,546	2,211	4,076‡
For conveying Coal ...	860†	912	1,257	1,462	2,561‡
Total ...	3,787	4,336	6,653	7,549	10,179

\* Estimated by Department of Mines, includes treatment plants at mine-head. † In 1903. ‡ Book value.

The values of plant and machinery in use afford some indication of the growth of the industry, since they constitute one important item of capital expenditure.

In the various editions of the "Australian Joint Stock Companies' Year Book," compiled by Mr. R. L. Nash, appear statements apparently prepared with great care, showing the paid-up capital of Australasian mining companies. By reference to the body of the book it is possible to ascertain the amount of paid-up capital of mining companies operating in New South Wales. In the editions of this work under date 1902, 1907, and 1913-14, particulars are published with regard to extant companies in and about the years 1901, 1906, and 1912, and these have been adopted for use. Careful

examinations of the returns lodged at the Registrar-General's Office in 1916 and 1921 have been made, and from them the paid-up capital of all or nearly all the mining companies existing in those years has been estimated. The paid-up capital of mining companies whose property is situated in New South Wales was estimated by these means to be as follows :—

Class of Mining.	1901.	1906.	1912.	1916.	1921.
	£000.	£000.	£000.	£000.	£000.
Metalliferous ... ..	9,458	9,475	8,789	8,912	8,057
Coal ... ..	2,557	3,954	5,671	6,390	9,602
Total ... ..	12,015	13,429	14,460	15,302	17,659

The above statement does not represent the amount of actual capital invested in the industry. It omits from consideration certain capital employed other than that shown in the shareholders' lists and summary as filed, and, in some cases, debentures, preference capital, etc. There is very little duplication due to the capital of one company being subscribed by another, but, apparently, a considerable portion of the amount shown in 1921 was due to the "writing-up" of assets by a number of companies in the preceding years. The apparent decline in metalliferous companies has been due to the gradual extinction of gold-mining as an industry, the amount of paid-up capital of companies operating gold mines being rather less than £1,000,000 in 1921 as against £3,850,000 in 1901. Silver and copper mining, however, declined between 1916 and 1921. A very large proportion of the paid-up capital of metalliferous mining companies is invested in treatment plants, which are included in the value of machinery used in the manufacturing industry.

Mining properties in New South Wales are not owned exclusively by companies, and although the metalliferous ventures owned by syndicates and individuals are relatively unimportant, very considerable capital is invested in coal mines not owned by companies.

Deducting 10 per cent. from the above results as an allowance for over-capitalisation and a further amount in 1921 to offset capital not represented by real investment, and adding the estimated value of coal-mining properties privately owned (estimated on the basis of the value of plant and machinery they contain) the following results have been obtained. They are considered to indicate approximately the value of mining properties in New South Wales, excluding from consideration the value of minerals contained in them.

Class of Mining.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£000
Metalliferous ... ..	4,200	4,200	4,000	4,050	3,600
Coal ... ..	2,760	4,270	6,120	6,900	9,900
Total ... ..	6,960	8,470	10,120	10,950	13,500
Per head of Population ...	£5·1	£5·7	£6·1	£5·8	£6·4

The data on which these estimates are based point to such diverse conclusions that some doubt is entertained as to the accuracy of the results, but it is believed that they are approximately correct.

The metalliferous branches of the industry have not prospered on the whole in recent years—the decline in copper and gold mining having been greater than the improvement in silver and miscellaneous enterprises. The coal-mining industry, however, has extended rapidly, and new and valuable fields have been opened up.

### *Machinery and Implements of Trade.*

Certain classes of machinery and implements have already been included under the headings "Private Railways" and "Mines and Mining Plant." It remains now to take into account the machinery used in connection with the pastoral, agricultural, dairying, and manufacturing industries of the State, and to include minor items consisting of machines and implements used in other trades and occupations. These minor items consist principally of the following classes: tools of trade, scientific, surgical, and dental implements, typewriters, adding and computing machines, kinematographs, and fishing nets, which in the aggregate represent a substantial proportion of the total.

An annual census of the value of machinery and implements used in the principal industries of the State is taken, and these returns provide all the required information. No returns are obtained for the minor items mentioned above, but these have been estimated from the values imported and locally manufactured by a method similar to that used in estimating the value of household effects, etc.

The results obtained by these methods are enumerated below:—

Kind of Machinery.	1901.	1906.	1911.	1916.	1921.
	£000	£000	£000	£000	£00
Pastoral ...	3,124	3,728	1,129	2,015	3,141
Agricultural ...			4,859	5,362	7,120
Dairying ...	235	417	519	571	910
Manufacturing ...	6,174	8,743	11,617	16,207	26,862
Other ...	915	1,247	1,653	2,240	5,074
Total ...	10,448	14,135	19,777	26,395	43,107
Per head of Population ...	£7·6	£9·5	£11·9	£13·9	£20·4

### *Shipping.*

In New South Wales registers of shipping are maintained at Sydney and Newcastle, and vessels appearing on these registers are assumed to belong to residents of New South Wales. It is probable that a number of shares are held locally in shipping companies whose vessels are registered elsewhere; no accurate method of estimating these is available. They are probably not extensive and are therefore excluded.

Returns of tonnage of vessels registered are made available at the middle and end of each year; these are classified according to tonnage and subdivided into steam and sailing vessels. This classification permits the

distribution of shipping into uniformly graded classes and facilitates valuation. The following table shows the net tonnage of vessels registered in New South Wales in the years mentioned :—

Ships registered.	1901.	1906.	1911.	1916	1921.
Number ... ..	1,022	1,077	1,089	1,142	1,017
Net Tonnage—					
Steam ... ..	78,919	76,992	81,409	94,715	131,012
Sailing ... ..	61,525	50,511	44,888	37,250	29,521
Total Tonnage ...	140,444	127,503	126,297	131,965	160,533

Of the vessels registered in 1921, 795 or 78·1 per cent. were of less than 100 tons net capacity, comprising 12·8 per cent. of the total tonnage registered. A noteworthy development of the period was the large increase in the tonnage of steam vessels and the large decrease in the tonnage of sailing vessels registered.

The valuation of these vessels was a matter which could not be effected with entire satisfaction. To ascertain values, application was made to most of the largest owners of shipping in the State for particulars of the total tonnage and approximate value of that portion of their fleets registered locally. This application met with a courteous response, and in many cases information was supplied for the years 1911, 1916, and 1921. The values ascertained from these returns constituted the basis of the estimated values for these years; some adjustments were made and some omissions supplied by reference to sales of British shipping recorded in "Fairplay," and to other statements there published with reference to shipping values. On the whole, it was found possible to obtain fairly satisfactory values throughout. For 1901 the estimates previously made were adopted.

The value of shipping registered in New South Wales was assessed as follows :—

Value of Shipping.	1901.	1906	1911.	1916.	1921.
Total... ..	£ 2,528,000	£ 2,875,000	£ 2,910,000	£ 5,152,000	£ 5,332,000
Per head of Population ...	£1·8.	£1·9.	£1·8.	£2·7.	£2·5.

#### *Household Effects, Vehicles, &c.*

In estimating the aggregate value which should be assigned to these items a number of methods were considered. Unfortunately, no statistical data of the values or quantities of these properties as a whole are available, and it is not considered practicable to formulate estimates that will reflect accurately the truth, by assessing the amount of furniture, etc., "necessary" for the habitations existent, either on the basis of average rental or the number of rooms.

The method adopted is similar to that used by the American Bureau of Statistics, where it was tested by other methods and approved. Recourse was had to the records of the value of those articles imported and manufactured, and an estimate was made in the following way :—

For each class of goods concerned in the estimate, the average annual net value of imports, plus the duty paid, was ascertained from the Trade and



Customs returns, over as many years as was found necessary to secure a sufficiently broad basis, and to the result was added the value of goods of the same class locally manufactured in the same period. To the resultant value an allowance of 50 per cent. was added to produce what was assumed to be the retail value of the goods new. This result was multiplied in turn by an assumed co-efficient of durableness expressed as a fractional or integral number of years, according to the nature of the articles concerned, in order to estimate the retail value new, of each kind of goods actually in use. From the result 33 per cent. was deducted to allow for wear and tear. The coefficients of durableness chosen were designed to produce a conservative estimate, and in no case was it assumed to exceed ten years. The values ascertained in this way are deemed to represent what may be called the value of the goods in their existing condition or their value as wealth to the owners, but not their value as second-hand goods.

Owing to the fact that manufacturing and customs returns are not classified on identical lines, and do not show sufficient detail to allow goods of the same kind to be grouped together, the results are not as precise as might be desired. They appear, however, internally consistent, and they are in substantial agreement with estimates made in 1901 and 1915 by other Statisticians employing other methods. In contrast with the results achieved by some other methods, their merit is that their basis is in direct relationship to the objects which they attempt to value; and even though this relationship suffers the disability of being arbitrarily estimated, so that the results may not be correct in absolute terms, they are probably near the truth, and at least relatively correct.

The principal items included are furniture, vehicles not elsewhere included, musical instruments, sewing machines, books, music, &c., floor coverings, cutlery, glassware, crockery, kitchenware, pictures, saddlery and harness, tents, fancy goods, clocks, firearms, and household drapery.

The total values and the values per head of population per occupied dwelling were estimated to be as follow :—

Value of Household Effects.	1901.	1906.	1911.	1916.	1921.
Total ... .. £000	11,845	16,091	26,450	31,680	48,416
Per head of population ... .. £	8·7	10·8	15·9	19·0	23·0
Per occupied dwelling ... .. £	46·8	...	79·5	...	111·7

Household stocks of food, groceries, fuel and kindred commodities are omitted from consideration.

Considered on a population basis, there was evidently a rapid growth in domestic comforts between 1901 and 1916; the apparent improvement thereafter was due rather to a rise in prices and values than to any material progress. The average value of these items per occupied dwelling is an interesting measure of the standard of home comforts in the State.

#### *Personal Effects.*

The principal items included under this heading are articles of clothing, jewellery, watches, bags, purses, etc. The estimated total values and the values per head of population in the respective years were as stated below :—

Value of Personal Effects.	1901.	1906.	1911.	1916.	1921.
Total ... .. £	3,603,000	4,825,000	6,166,000	8,697,000	13,067,000
Per head of population ... .. £	£2·6	£3·3	£3·7	£4·6	£6·2

The method used in estimating the value of these items was similar to that adopted in estimating the value of household effects, but a deduction of 50 per cent. was made from the estimated value new of the goods in use to allow for depreciation.

#### DIVERGENCES FROM PREVIOUS ESTIMATES.

The estimate for 1891 here used is constructed from estimates made by Sir T. A. Coghlan in 1891 and in 1892, the latter being based on the census of 1891. Certain adjustments have been made, particularly in the value ascribed to land—debts due to the Crown on conditional purchase lands, and the value of Crown leases being allowed for, in order to put the estimate on the same basis as those for later years, where these items are included as public wealth.

For 1901 the total estimate is approximately £10,000,000 greater than that of Sir T. A. Coghlan, and this change is due to the adjustment of certain items by using data which have since become available, more especially in regard to land, and to certain alterations necessary where private wealth and public wealth are treated as component parts of the national wealth, such as those in connection with Crown lands mentioned above.

The estimate by Mr. G. H. Knibbs of the private wealth of New South Wales on 30th June, 1915, was £660,800,000, or nearly £70,000,000 less than the estimate here made for the latter part of 1916. While this divergence is due in large measure to the increased values of land, live stock, and merchandise and, in a smaller degree, to development, and to a certain appreciation of values, difference of method accounted for a considerable part of it.

As already stated, live stock in 1915 were assessed at the values prescribed for use in compiling Federal income-tax returns, whereas in 1916 the market value of store stock was used. Had this method been employed in 1915 the value would have been increased by probably £15,000,000.

In valuing land and improvements for the estimate of 1915 the assessments of local government bodies were apparently adopted without modification. It has since been revealed by the Valuer-General that these assessments seriously understate the real values. Therefore, in formulating the estimates of 1916, important additions were made, as indicated, and the value of private property in the Murrumbidgee Irrigation Areas was added. It was found also that the amount of Government property included in local government assessments was considerable, and the deduction necessary on this account had the effect of bringing the ultimate result nearer that of 1915.

The token coinage in circulation has increased very much since 1906, when it was last estimated, and estimates have been made which it is believed are more accurate than that based on the assumption that the total circulation per head has remained stationary. The amount of gold held by the banks in New South Wales decreased heavily during the year, owing to the increased reserve of gold in the Commonwealth Treasury against the issues of its bank-notes and to war-time adjustments.

The value of personal effects in the estimate of 1915 was assumed to be £3 per head of population, which it was said might be taken as a figure which at all events does not exaggerate the position. The estimate of 1916 was based on the principles already explained and produce a much greater result although every care was taken to avoid overstatement. The estimate of the value of household effects in 1916 based on similar principles was in very close agreement with that of 1915.

The following table is a comparison of the estimate made by Mr. G. H. Knibbs in 1915, with that of the present author for 1916. The per capita rates are calculated on the mean population of each year. Owing to the departure of soldiers for active service abroad neither statement is an altogether satisfactory reflex of the amount per unit of population.

Item of Wealth.	1915 (G. H. Knibbs).		1916 (H. A. Smith).	
	Total.	Per head of population.	Total.	Per head of population.
	£000	£	£000	£
1. Land and Improvements ... ..	472,925	250·1	498,793	263·5
2. Live Stock ... ..	38,260	20·2	70,679	37·3
3. Coin and Bullion ... ..	13,877	7·3	12,618	6·7
4. Merchandise ... ..	58,231	30·8	63,924	33·8
5. Private Railways ... ..	1,461	·8	1,136	·6
6. Mines and Mining Plant ... ..	10 875	5·7	10,950	5·8
7. Machinery and Implements ... ..	23,958	12·7	26,395	13·9
8. Shipping ... ..	4,215	2·2	5,152	2·7
9. Household Effects, Vehicles, &c. ... ..	31,392	16·6	31,680	16·7
10. Personal Effects ... ..	5,606	3 0	8,697	4·6
Total ... ..	660,800	349·4	730,015	385·6

## AGRICULTURE.

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THE land of New South Wales, comprising an area of nearly two hundred million acres, is practically all under occupation. It embraces so great a variety of soils and climate that almost any kind of crop, whether specially the produce of temperate, and even cold, climates, or of sub-tropical regions, may be grown. The nature of the soil varies greatly in different parts of the country; but, except in the inaccessible or rugged portions of the mountain chains, and the more arid regions of the north-western districts, the soil is almost everywhere susceptible of cultivation. The variety of climate experienced extending through 8 degrees of latitude—from 29 degrees to 37 degrees south—causes a corresponding variety in the kinds of produce which may be grown successfully. The area absolutely unfit for occupation of any sort has been estimated roughly at less than 5,000,000 acres; it may, therefore, be said that the greater part of the area adapted for settlement is also, in some form or other, capable of being cultivated, and desert land is practically non-existent. Success in agricultural operations in New South Wales is, however, altogether independent of the mere fitness of the soil for cultivation. Up to the present, experience has shown that an irregular rainfall and a want of uniformity in the seasons, which are the chief characteristics of the climate of a large part of the interior, are the greatest drawbacks to the advance of agriculture, but research and experiment are extending steadily the areas on which agricultural pursuits may be followed with success.

The land adaptable to cultivation, under existing conditions, is found mainly in the Eastern and Central Divisions, which cover three-fifths of the area of the State; but, owing to the confined nature of their basins, the portions of the valleys of the Coastal Rivers adapted for agriculture are limited, and the region is given over principally to dairy-farming. Large tracts of the Tablelands are hilly and rock-strewn, and are used mainly for sheep-raising. In the northern hinterland sheep-raising is still the principal industry, although that division has a plentiful rainfall and large areas adaptable to wheat-culture. It is, therefore, to the southern slopes and plains of the interior that agriculture at present is confined principally, and especially to the extensive and well-named Riverina district and the fertile tracts adjoining it on the north and east. Even here, however, only a small portion of the land has been cultivated, and great expansion is still possible.

The meagre rainfall and the absence of irrigation facilities in the Western Division, which includes eighty million acres, or two-fifths of the surface of the State, have hitherto rendered this great area practically unfit for cultivation, but it is eminently suited for raising merino sheep. The possibilities as wheat-growing lands of some ten million acres of land in its southern end are at present being investigated.

The agricultural potentialities of the more easterly areas have not yet been fully developed, but wheat-growing is steadily intensifying in the east, while mixed farming is extending westward. Wheat-growing is conducted in many parts in conjunction with sheep-raising. Moreover, factors such as the evolution of improved plant types, the introduction of dry-farming and other improved methods of land tillage, the extension of irrigation facilities, and the development of the railway system, are expanding the area adaptable to successful agriculture and encouraging the cultivation of new areas.

The density of the population in New South Wales is one person to about 100 acres, and less than 4 acres per inhabitant have yet been turned by the plough.

#### AREA UNDER CULTIVATION.

Although an accurate soil survey of the State has not yet been made, it has been concluded from an approximate estimate, that, under existing conditions of agriculture, practically one-fifth of the area of New South Wales, or forty million acres of land, is adaptable to agriculture; but of this area less than one-fifth has been sown in any season.

Prior to 1890 agriculture developed very slowly in New South Wales, and, until 1897, a large proportion, ranging from one-third to one-half of the wheat supply of the State, for many years had to be imported from abroad. Maize-growing was generally on a more extensive scale than it is to-day, and the quantity produced was frequently greater than the quantity of wheat grown. Other crops were insignificant, and pastoral pursuits were the only extensive source of wealth-production in the State. Suddenly, toward the end of the nineteenth century, there began a rapid expansion in wheat-growing, and the area devoted to cultivation commenced to increase.

This development was made possible by the combination of a number of favouring circumstances—railway facilities began to improve rapidly after 1880, population grew, and labour became more plentiful owing to the occurrence of a depression in other industries, new land tenures were introduced in 1895, the system of share-farming gained some popularity, and interest was stimulated by a number of interstate conferences held in Victoria which gave publicity to the valuable work of the eminent local experimentalist in wheat-breeding, William Farrer, which led to an improvement in wheat types and produced plants suited to the exigencies of local conditions. Moreover, in 1896 and 1897 the world's yield of wheat fell short of its needs. In 1897 the first surplus of wheat above local requirements was grown in New South Wales, and more than half-a-million bushels were exported in 1898. Since that date, wheat-growing has made rapid headway, and, though cultivation of other crops has not assumed importance, agriculture now constitutes an increasingly important factor in the production of wealth in the State.

The progress of cultivation since 1891, in quinquennial periods, is shown in the following table :—

Years ended June—	Average Area under—		Acres per Inhabitant under—	
	Cultivation, including Grasses.	Crops.	Cultivation.	Crops.
	acres.	acres.		
1891-95	1,398,199	1,048,554	1.18	0.88
1896-1900	2,252,649	1,894,857	1.73	1.46
1901-05	2,942,506	2,436,765	2.10	1.74
1906-10	3,575,873	2,824,253	2.34	1.84
1911-15	5,187,850	4,025,165	2.93	2.27
1916	7,041,934	5,794,835	3.72	3.06
1917	6,520,187	5,163,030	3.44	2.73
1918	5,850,341	4,460,701	3.04	2.32
1919	5,329,309	3,890,844	2.71	1.98
1920	5,313,472	3,770,155	2.61	1.85
1921	6,280,517	4,464,342	3.01	2.14

The features of this table are the rapid extension which occurred toward the end of the last century, and the more rapid expansion between 1910 and 1916. The decline in the three years 1918-1920 was due to the occurrence of a series of bad seasons and to the uncertain outlook which faced the growing of wheat for export during the war. The cultivation of maize and oats has also fallen off in recent years; other crops are of small extent.

VALUE OF PRODUCTION.

The estimated value of the agricultural production of the State during the last four seasons in comparison with 1915-16, the year of maximum agricultural production, and the proportionate value of each crop to the total value, are shown in the following table, the values being based on prices realised on the farm :—

Crop.	Value.					Proportion per cent.				
	1915-16.	1917-18.	1918-19.	1919-20.	1920-21.	1915-16.	1917-18.	1918-19.	1919-20.	1920-21.
	£	£	£	£	£					
Wheat .. ..	13,352,980	7,385,140	3,588,650	2,194,020	20,164,060	65·6	54·0	29·2	16·2	62·3
Maize .. ..	723,270	875,220	580,380	1,502,900	974,260	3·6	6·4	4·7	11·1	3·0
Barley .. ..	20,630	19,280	20,890	12,160	23,270	0·1	0·1	0·2	0·1	0·1
Oats .. ..	173,820	266,720	265,350	168,700	241,480	0·9	2·0	2·2	1·2	0·7
Hay and Straw ..	3,897,910	2,774,200	4,356,770	5,468,005	7,494,209	19·1	20·2	35·5	40·3	23·2
Green Food .. ..	367,820	296,460	477,400	1,002,770	437,888	1·8	2·2	3·9	7·4	1·3
Potatoes .. ..	294,390	222,900	295,010	642,920	300,910	1·4	1·6	2·4	4·7	1·0
Sugar-cane .. ..	205,070	264,500	167,060	152,452	287,250	1·0	1·9	1·4	1·1	0·9
Grapes .. ..	98,400	53,860	113,920	111,180	143,020	0·5	0·4	0·9	0·9	0·4
Wine and Brandy ..	47,840	50,690	85,700	148,900	127,420	0·2	0·4	0·7	1·1	0·4
Fruit—Citrus .. ..	252,170	384,660	745,070	534,530	477,580	1·2	2·8	6·0	3·9	1·5
Other .. ..	243,210	376,390	577,990	555,058	577,290	1·2	2·8	4·7	4·1	1·8
Market-gardens ..	400,860	409,380	441,060	511,310	556,587	2·0	3·0	3·6	3·7	1·7
Other Crops .. ..	283,990	305,500	564,940	577,185	558,028	1·4	2·2	4·6	4·2	1·7
Total .. ..	20,362,360	13,684,900	12,280,190	13,582,090	32,372,550	100	100	100	100	100

Prior to 1920-21 the value of agricultural production reached its highest point in 1915-16, principally by reason of the largely augmented wheat yield of that year, which was supplemented by the occurrence of unusually high prices in the early part of the season as a consequence of the shortage in production caused by the drought in the previous year. In the years which followed, various causes, such as the uncertain condition of the wheat market, the derangement of oversea shipping, and the occurrence of indifferent seasons, combined to bring about a considerable decline in the volume of agricultural production, which reached its lowest point in the bad season which occurred in 1919-20. However, partly as a result of the scarcity due to bad seasons, and partly owing to factors connected with the war, prices of agricultural produce advanced considerably after 1917, and the monetary value of production remained fairly constant until 1920-21, when the remarkable yield of wheat which followed the breaking of the drought and the high price guaranteed by the Government, based on world's parity, produced by far the most valuable crop of wheat yet harvested in New South Wales. The large part played by prices may be gauged from a consideration of the index numbers quoted later. An analysis of the relationship of volume to value of production is given in the Chapter "Employment and Production" of this Year Book.

The agricultural wealth of New South Wales at present depends mainly on the return from wheat crops, including hay and straw, the value of these crops in 1920-21 being £27,658,000, or nearly 86 per cent. of the total. Maize is next in importance, but the returns from other crops are comparatively small.

The value of production from agriculture, together with the average value per acre, affords an interesting summary of the expansion of agricultural pursuits and a measure of the condition of the industry.

Years ended June—	Average Annual Area Cultivated.	Average Annual Value of Production.	Value per Acre.
	acres.	£	£ s. d.
1887-91	858,367	4,030,611	4 13 11
1892-96	1,147,733	3,812,393	3 6 5
1897-1901	2,114,250	5,592,620	2 12 11
1902-06	2,515,268	6,302,903	2 10 1
1907-11	2,933,021	8,565,164	2 18 5
1912-16	4,507,748	12,867,474	2 17 1
1917	5,163,030	13,011,530	2 10 5
1918	4,460,701	13,684,990	3 1 4
1919	3,890,844	12,280,190	3 3 1
1920	3,770,155	13,582,090	3 12 1
1921	4,464,342	32,372,550	7 5 0

The high value of production per acre shown in the ten years prior to 1897 was due to the fact that agriculture was on a smaller scale; cultivation was more intense than in recent years, and the yield per acre was usually higher. The increased value shown since 1918 has been due mainly to the large increases in the prices received for produce, but, in 1921, this factor was augmented by the record yield of wheat per acre.

The average value per acre of various crops during each of the last four seasons is shown below in comparison with the average for the ten years preceding 1920-21 :—

Crop.	Average Values per Acre.				Average Value for 10 Years preceding 1920-21.
	1917-18.	1918-19.	1919-20.	1920-21.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat for Grain ...	2 4 4	1 9 9	1 9 9	6 8 11	2 0 7
Maize ...	6 0 1	5 1 3	11 0 2	6 15 2	5 8 8
Oats...	3 4 7	3 1 4	2 4 4	3 2 2	2 10 7
Hay...	4 8 10	5 6 6	5 16 2	8 14 1	4 1 8
Potatoes ...	9 17 5	14 2 7	32 1 6	10 14 6	12 14 9
Sugar-cane...	47 6 8	36 11 9	31 11 8	52 1 0	32 12 7
Vineyards ...	16 3 6	30 5 4	39 15 6	36 13 5	21 17 2
Orchards ...	18 8 11	29 17 0	23 1 3	21 8 1	17 10 8
Market-gardens ...	40 7 6	43 18 4	51 15 10	56 3 4	39 9 11

This average value of production per acre measures the combined effect from year to year of yield obtained and prices realised, and may therefore be said to express the effect of market and season on the returns obtained by farmers from their holdings. To make the analysis complete, modifying factors, such as the cost of production, drought, and other causes of loss, should be taken into consideration.

Between the 1915 and 1919 seasons the return from wheat grown for grain was far below the average. This fact shows clearly the serious effects of the recent bad seasons, and of the uncertain market, on the growing of the principal agricultural product. A comparison with the returns obtained

from hay crops (which are principally wheaten) adds weight to this point. Not only has the value per acre of hay products been far higher absolutely, but, from year to year, there has been a considerable improvement in the prices realised. The market for hay, however, is local and limited. It is also apparent that wheat was almost unique in furnishing a decreasing return per acre until 1920-21, but the high yield and prices of that season afforded a large measure of compensation to growers. The values of other crops, except oats, have all shown very rapid improvement, and particularly noteworthy in this respect is the increased return from maize-growing, which for many years has been languishing.

On the basis of the average yield and the average price realised for wheat in the Voluntary Pool, the value of wheat grown for grain in the season 1921-22 was approximately £3 per acre.

#### WHOLESALE PRICES OF FARM PRODUCE.

The prices realised for agricultural produce in New South Wales, when not regulated by any authority, vary with the seasons, and, therefore, show very great fluctuations. Wheat and flour, for which alone a foreign market exists, have been closely regulated in price since 1914, and, except in the years 1915 and 1920, when low production rendered importation necessary, the prices were allowed to vary but little. In 1921, the prices of wheat and flour in New South Wales were maintained at a figure above world's parity in order to enable the payment to growers of the minimum price guaranteed by the Government—7s. 6d. per bushel. Wheat sold locally to millers for export as flour, up to 1920, however, brought considerably higher prices than the averages shown below. In the case of other produce, local production falls short of the requirements of the State, importation is usually necessary, and prices for these commodities are determined by external market conditions.

The quotations here given represent the average prices obtained for farm products in the various Sydney markets; for country districts due allowance must be made for cost of transportation, etc. The average for the year represents the mean of the prices ruling during each month, and does not take into account the quantity sold during the month. The prices ruling in each month of the year are shown in the "Statistical Register." The figures are those quoted by the middleman, and not those obtained by the producers.

Crop.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat .. .. bush.	0 5 5	0 4 10	0 4 9	0 4 9	0 5 1½	0 8 7½	0 8 8
Flour .. .. ton	13 7 0	11 5 4	11 1 0	11 0 0	11 5 9	18 10 11	19 6 7½
Bran .. .. bnsh.	0 1 3¼	0 0 10½	0 0 9½	0 0 9½	0 1 2½	0 1 9½	0 1 7½
Pollard .. .. "	0 1 5½	0 1 0½	0 1 0½	0 1 1	0 1 3	0 2 0	0 1 8½
Barley (Cape) .. .. "	0 5 6½	0 3 1½	0 3 5	0 4 1	0 5 8	0 7 11	0 3 7½
Oats .. .. "	0 4 7	0 2 10½	0 3 1	0 4 7	0 5 9½	0 5 7	0 3 5½
Maize .. .. "	0 5 2½	0 4 6	0 3 9½	0 5 7	0 8 0	0 8 7	0 5 3½
Potatoes (local) .. .. ton	7 9 1	7 15 2	10 10 9	6 1 8	14 8 3	12 6 3	6 0 2½
Onions .. .. "	7 19 0	5 0 9	10 5 0	14 4 9	15 12 5	20 7 3	5 12 1½
Hay—							
Oaten .. .. ton	8 4 8	4 7 0	4 16 0	6 4 2	9 19 2	11 18 8	7 11 10½
Lucerne .. .. "	5 16 7	4 6 0	3 12 0	4 17 9	10 9 7	11 6 10	5 18 5½
Chaff—							
Wheaten .. .. "	7 3 8	3 18 10	4 1 4	5 11 6	8 18 9	10 12 11	6 8 8½

The combined price variations since 1901 of agricultural produce in Sydney markets, weighted according to the average consumption in the three



years 1911-13, are shown below. The prices in 1911 have been adopted as base.

Year.	Index No.	Year.	Index No.	Year.	Index No.
1901	834	1908	1343	1915	1648
1902	1266	1909	1134	1916	1163
1903	1181	1910	1012	1917	1127
1904	789	1911	1000	1918	1377
1905	972	1912	1339	1919	1990
1906	929	1913	1069	1920	2430
1907	1003	1914	1135	1921	1750

It will be observed that, though seasonal causes operated to produce high prices in 1902, 1903, 1908, 1915, 1919, and 1920, there was, nevertheless, a marked rise in the price level due to other causes; but, if comparison be made with the index numbers for other commodities shown in the Chapter "Food and Prices" of this Year Book, it will be seen that the market improved less for agricultural produce than for any other group of commodities.

#### AGRICULTURAL SETTLEMENT.

The following statement gives particulars of the area under crop in the seasons 1905-06, 1915-16 (the season of maximum cultivation), and 1920-21, and shows the advances in agriculture made in various districts:—

Division.	Area under Crops.			Index Numbers. (1905-06 = 100.)	
	1905-06.	1915-16.	1920-21.	1915-16.	1920-21.
Coastal—	acres.	acres.	acres.		
North Coast ... ..	109,704	95,024	86,602	87	79
Hunter and Manning ... ..	103,511	102,526	97,946	99	95
Cumberland ... ..	46,053	35,796	34,448	78	75
South Coast ... ..	51,009	45,257	43,623	89	86
Total ... ..	310,277	278,603	262,619	90	85
Tableland—					
Northern ... ..	68,862	80,597	80,308	118	117
Central ... ..	222,715	366,981	267,165	165	120
Southern ... ..	55,336	82,844	58,991	150	107
Total ... ..	346,413	530,422	406,464	153	117
Western Slopes—					
North ... ..	265,217	555,488	374,855	209	141
Central ... ..	412,578	890,105	719,000	216	174
South ... ..	442,855	1,126,381	698,216	254	158
Total ... ..	1,120,650	2,571,974	1,792,071	229	160
Central Plains—					
North ... ..	10,261	40,322	27,541	393	266
Central ... ..	287,437	593,714	493,106	207	172
Total ... ..	297,698	634,036	520,647	213	175
Riverina ... ..	745,183	1,769,473	1,476,551	238	198
Western ... ..	17,860	10,322	5,990	58	34
All Divisions ... ..	2,838,081	5,794,835	4,464,342	204	157

The season of 1919-20 was particularly unfavourable to agriculturists, and the decline indicated since 1915-16 was due probably to seasonal rather than to permanent causes. The area under wheat in the season 1921-22 was approximately the same as in 1920-21, and, as weather conditions were favourable to agriculture, it may be surmised that in 1921-22 the area under crop was probably no greater than in 1920-21.

It is, nevertheless, apparent that the sowing of crops is gradually waning in the coastal districts, where the bulk of the maize crop is raised. On the Tablelands agriculture is not in a flourishing condition, but, seemingly, favourable conditions will lead to a largely-increased area such as was cultivated in 1915-16. It is, however, on the hilly slopes and the plains of the central interior that crops are raised, and more particularly in the southern parts of this area. The Western Division has not been found a profitable region for cultivation.

The area under crop in 1915-16 affords evidence that, given favourable conditions, large possibilities for expansion exist in the State, particularly in the Central, Southern, and Riverina Divisions.

Compared with the total area occupied for agricultural and pastoral purposes in the State the area tilled barely exceeds 3 per cent., and this indicates the small development of New South Wales as an agricultural country.

The following table shows the total area under crops, together with the total area of each Division, and the area in occupation, during the season 1920-21 :—

Division.	Total Area of Division.	Area under—			Proportion of area under Crops to Area under Occupation.
		Occupation in Holdings of 1 acre and over.	Crops.	Sown Grasses.	
Coastal—	acres.	acres.	acres.	acres.	per cent.
North Coast ... ..	5,409,370	3,854,389	86,602	1,343,389	2·2
Hunter and Manning ... ..	10,390,920	6,448,629	97,946	221,423	1·5
Cumberland ... ..	1,070,989	385,440	34,448	2,616	8·9
South Coast ... ..	5,484,122	2,464,372	43,623	157,029	1·8
Total ... ..	22,355,401	13,152,830	262,619	1,724,457	2·0
Tableland—					
Northern ... ..	8,928,487	7,332,039	80,308	6,118	1·1
Central ... ..	8,989,259	6,145,967	267,165	3,834	4·3
Southern ... ..	7,913,500	6,524,863	58,991	10,175	0·9
Total ... ..	25,831,246	20,002,869	406,464	20,127	2·0
Western Slopes—					
North ... ..	9,813,555	8,818,920	374,855	5,271	4·3
Central ... ..	6,252,567	5,249,839	719,000	3,641	13·7
South ... ..	8,185,759	6,910,529	698,216	5,364	10·1
Total ... ..	24,251,881	20,979,288	1,792,071	14,276	8·5
Central Plains—					
North ... ..	10,030,901	8,133,853	27,541	200	0·3
Central ... ..	16,029,880	15,186,559	493,106	1,387	3·2
Total ... ..	26,060,781	23,320,412	520,647	1,587	2·2
Riverina ... ..	19,767,073	18,426,490	1,476,551	54,697	8·0
Western ... ..	80,368,498	76,913,324	5,990	1,031	0·0
All Divisions ... ..	198,634,880	172,795,213	4,464,342	1,816,175	2·6

The figures shown above include particulars of the Federal Capital Territory, the area of which is 583,660 acres, and of the Federal territory of Jervis Bay 17,920 acres. The total area shown includes 2,969,000 acres covered by rivers and lakes, and 112,750 acres embraced in the eight principal harbours.

This table illustrates the small extent, referred to above, of the agricultural development of the State. Even in the most fertile divisions, less than one-seventh of the area under occupation was cultivated in 1920-21.

An analysis of the area under crop in the past four seasons is made below, and the yields of respective crops are shown also. The year ended 30th June, 1916, in which agriculture reached its highest development, has been included for comparative purposes.

Crop.	1915-16.	1917-18.	1918-19.	1919-20.	1920-21.
Wheat (grain)—					
Area ... .. acres	4,188,865	3,329,371	2,409,669	1,474,174	3,127,377
Total yield ... .. bush.	66,764,910	37,712,000	18,325,000	4,388,022	55,625,000
Average yield p.a. ... bush.	15·9	11·3	7·6	3·0	17·8
Maize—					
Area ... .. acres	154,130	145,754	114,582	136,509	144,105
Total yield ... .. bush.	3,773,600	3,499,958	2,091,921	4,052,025	4,176,000
Average yield p.a. ... bush.	24·5	24·0	18·3	29·7	29·0
Oats (grain)—					
Area* ... .. acres	58,636	82,591	86,474	76,117	77,709
Total yield ... .. bush.	1,345,698	1,455,111	1,273,752	586,758	1,642,700
Average yield p.a. ... bush.	23·0	17·6	14·7	7·7	21·1
Hay—					
Area ... .. acres	1,108,919	620,644	814,960	938,400	854,263
Total yield ... .. tons	1,573,938	784,206	754,030	580,586	1,374,656
Average yield p.a. ... tons	1·42	1·26	·92	·62	1·61
Green Crops—					
Area ... .. acres	162,945	152,519	331,129	1,007,506	112,003
Potatoes—					
Area ... .. acres	19,589	22,580	20,879	20,043	27,673
Total yield ... .. tons	44,445	49,984	30,356	49,986	63,256
Average yield p.a. ... tons	2·27	2·21	1·45	2·49	2·29
Sugar-cane—					
Area cut ... .. acres	6,030	5,588	4,566	4,827	4,721
Total yield ... .. tons	157,748	174,881	105,234	91,321	122,993
Average yield p.a. ... tons	26·16	31·30	23·05	18·92	26·05
Orchards, etc.—					
Area ... .. acres	63,823	73,020	64,185	82,388	87,342
Market Gardens—					
Area ... .. acres	10,967	10,139	10,043	9,872	9,915
Total yield ... .. £	400,860	409,380	441,070	511,311	556,887
Average yield p.a. ... £	36·6	40·4	43·9	51·2	56·2
Minor Crops—					
Area ... .. acres	26,843	20,676	37,115	23,741	22,001
Total Area* ... acres	5,800,747	4,462,882	3,893,602	3,773,577	4,467,109

\* Including area double-cropped.

It will be observed that wheat is the only crop extensively grown. The largest part of the area devoted to hay is also under wheat, though considerable areas are used for the production of oaten and lucerne hay.

In addition to the area shown as cultivated and under sown grasses, 89,142,087 acres are ringbarked, partly cleared, and under native grasses; and 2,740,296 acres were ready for cultivation on alienated holdings, including 2,388,023 acres which had been cropped previously, 129,050 acres of new land cleared and prepared for ploughing, and 223,223 acres in fallow.

AGRICULTURAL HOLDINGS.

A consideration of the number of holdings on which land was cultivated, and the various purposes for which these holdings were utilised, affords interesting information as to the popularity of the various crops. The number of farms on which wheat is sown, so far from exhibiting any permanent increase, declined after 1915-16, owing to bad seasons, although the area devoted to this crop has practically doubled in the past twenty years. Several minor industries have been languishing over lengthy periods, and less attention is being paid to maize, potatoes, sugar-cane, and grape-growing. The cultivation of oats has extended, citrus fruit-growing is gaining rapidly in importance, and the occurrence of good seasons and high prices has given some stimulus to tobacco-growing.

Relatively to the area cultivated, the number of holdings on which maize is grown is greatly in excess of that of wheat, owing to the fact that many dairy-farmers crop small areas for use on the farms; whereas portion of the area under wheat—varying from one-fourth to one-seventh—is cultivated on the “shares” system, by which two or more growers cultivate one holding.

The number of holdings on which the principal crops were cultivated at intervals since 1900-01 is shown below.

Crop.	Number of Cultivated Holdings.				
	1900-01.	1905-06.	1915-16.	1918-19.	1920-21.
Wheat ... ..	20,149	19,049	22,453	17,281	17,790
Maize ... ..	17,569	17,475	14,869	12,221	15,272
Barley ... ..	2,246	1,755	2,538	2,127	1,851
Oats ... ..	11,547	10,740	13,723	13,008	15,870
Potatoes ... ..	9,521	8,552	4,643	3,519	4,566
Tobacco ... ..	31	98	97	141	129
Sugar-cane ... ..	1,214	1,113	694	620	667
Grapes ... ..	1,832	1,530	1,292	1,275	1,388
Fruit—Citrus ... ..	1,905	2,385	5,787	6,165	6,071
Other ... ..	8,064	6,846	8,760	8,147	8,793
Market Gardens ... ..	2,266	2,842	3,301	2,729	2,546
Total Cultivated Holdings*	45,828	46,349	50,632	44,509	48,664

\* Holdings used for dual purposes are included once only.

Particulars for 1919-20 are not available, except in regard to holdings under wheat, the number of which in that year was 16,266. Maize and oats crops for market are grown on only a small proportion of the holdings where they are cultivated.

Although the number of cultivated holdings has not increased appreciably since 1901, the extent of the agricultural industry has grown very much, as may be seen from the comparison on page 708. The total number of holdings of one acre and upwards used for agricultural and pastoral purposes in 1920-21 was 80,065, and on 48,664, areas of varying sizes were cultivated. Only 11,032 holdings were used exclusively for agricultural purposes, and of these 1,190 were irrigated. In addition, however, 19,336 combined agricultural with pastoral pursuits, 5,112 combined agriculture with dairying, 1,549 combined all three pursuits, and a limited amount of cultivation of a non-commercial character was carried out in connection with other activities. There were, in all, 31,401 holdings without any cultivated land, and of these, 27,170 were used for grazing purposes.

## VALUE OF FARMING LANDS.

In 1920-21 information was collected from individual farmers as to the improved and unimproved values of the freehold lands contained in their holdings. The unimproved capital value was defined as being the amount which the land might be expected to realise if sold under such reasonable conditions as a *bona fide* seller would require, assuming that the actual improvements had not been made, and the improved capital value as the value of the land with all improvements and buildings thereon under similar conditions of sale. Where not available from owners, these particulars were taken from the records of Shire Councils.

The area of land so valued was 61,149,000 acres, the total value unimproved £103,951,000, or an average of £1 14s. per acre, and the total improved value £272,020,000, or an average of £4 10s. per acre. There were in addition 111,646,000 acres of Crown lands, principally in the Western Division, which were held in conjunction with these alienated lands. The value of these to their occupiers, estimated by capitalising the annual rental as prescribed in the Local Government Act, 1919, was approximately £13,000,000. The value of machinery and implements used on rural holdings in the year 1920-21 was £11,172,000, and the estimated value of live stock £51,347,000, indicating that the capital value of land, houses, and other improvements, live stock, machinery and implements used in connection with the rural industries in 1920-21 was approximately £348,000,000.

The following table shows in divisions of the State the distribution of alienated and Crown lands occupied in holdings of one acre and upwards for agricultural and pastoral purposes, together with total and average value of the alienated lands:—

Division.	Area of Alienated Land in Occupation in Holdings over 1 acre in extent	Unimproved Capital Value.		Improved Capital Value.		Area of Crown Land.
		Total.	Average per acre.	Total.	Average per acre.	
	Acres.	£000.	£	£000.	£	Acres.
<i>Coastal</i> —	000.					000.
North Coast ...	2,533	9,448	3·7	30,056	11·9	1,322
Hunter and Manning	4,758	10,857	2·3	31,034	6·5	1,690
Metropolitan...	382	3,465	9·1	7,775	20·3	3
South Coast ...	1,718	4,298	2·5	11,369	6·6	747
Total ...	9,391	28,068	3·0	80,234	8·5	3,762
<i>Tablelands</i> —						
Northern ...	3,767	5,428	1·4	12,759	3·6	3,565
Central ...	4,084	6,271	1·5	17,291	4·2	2,062
Southern ...	4,132	4,939	1·2	14,144	3·4	2,393
Total ...	11,983	16,638	1·4	45,194	3·8	8,020
<i>Western Slopes</i> —						
North ...	5,755	10,476	1·8	23,956	4·2	3,063
Central ...	3,539	5,675	1·6	16,903	4·8	1,711
South ...	5,593	9,979	1·8	29,547	5·3	1,318
Total ...	14,887	26,130	1·7	70,406	4·7	6,092
<i>Plains</i> —						
North-central ...	3,302	4,022	1·2	7,518	2·3	4,832
Central ...	6,751	7,184	1·1	17,979	2·7	8,435
Riverina ...	13,167	21,040	1·6	48,343	3·7	5,260
Total ...	23,220	32,246	1·4	73,840	3·3	18,527
<i>Western Plains</i> ...	1,668	869	·5	2,346	1·4	75,245
<i>Whole State</i>	61,149	103,951	1·7	272,020	4·4	111,646

Particulars of the rainfall, productivity, and population of each of these divisions are shown on page 57 of this Year Book. It will be observed that the average values per acre are closely related to these factors. The alienated lands in the Western Division consist mainly of areas where special water facilities are available, and are by no means representative of the value of the extensive Crown lands there situated.

#### MACHINERY.

For harvesting grain-crops the reaper and binder, the stripper, and the harvester are used, and there is considerable difference of opinion regarding the relative efficiency of each of these implements. The reaper and binder is employed almost exclusively in moist districts, but over the greater portion of the wheat areas conditions are favourable to the use of the harvester. A modern type of harvester, particularly adapted to Australian conditions, produced and developed locally, has contributed largely to the expansion of wheat cultivation, since it has enabled grain to be garnered with a considerable saving of time and labour. It is, however, a matter of some debate whether this useful implement is adaptable to the conditions which will govern harvesting should a system of bulk-handling of grain receive extensive application.

The following statement shows the area farmed, the total value of the machinery used, and the value of the machinery used per acre, in Divisions of the State in the year 1920-21 :—

Division.	Area Farmed.	Value of Machinery.	Value of Machinery per Acre.
	acres.	£	£ s. d.
Coastal ... ..	262,619	932,870	3 11 0
Tableland ... ..	406,464	868,420	2 2 9
Western Slopes ... ..	1,792,071	2,586,660	1 8 10
Central Plains and Riverina ...	1,997,198	2,879,810	1 6 10
Western ... ..	5,990	52,620	8 15 8
Total ... ..	4,464,342	7,120,380	1 11 11

In the coastal and tableland districts farming is intense, including many small holdings highly developed for fruit-growing, dairying and market gardening, while on the slopes and plains the implements used serve wider areas. In the Western Division are a number of small irrigation settlements, but the area there farmed is too small to give an average which might be considered for purposes of comparison.

A comparison of the value of farming implements and machinery in use during various years since 1900-1901 in each of the rural industries is shown in the following table :—

Season.	Farming.	Dairying.	Pastoral.*	Total Value.
	£	£	£	£
1900-01	2,065,780	237,220	754,050	3,057,050
1905-06	2,537,260	365,440	1,120,990	4,043,690
1910-11	3,414,620	534,740	1,483,080	5,432,440
1915-16	5,362,030	570,950	2,015,050	7,948,030
1918-19	5,696,920	711,960	2,609,530	9,018,410
1919-20	6,128,750	812,070	5,016,070	9,956,890
1920-21	7,120,380	910,260	3,141,030	11,171,670

\* Includes in many cases farming implements used on pastoral holdings.

## FERTILISERS.

In New South Wales superphosphate is the only artificial fertiliser used in any considerable quantity, the soils in the wheat areas being generally deficient in phosphoric acid. Tests of manure conducted on the farmers' experiment plots indicate that the benefits derived from the application of superphosphates to wheat-lands, as a general rule, are most marked in the southern portion of the wheat-belt, viz., the South-western Slope and the Riverina. The beneficial results gradually diminish throughout the western districts which form the central portion of the wheat-belt, and in the north-western districts no advantage is gained by the use of this fertiliser. The results may be affected, however, by the fact that fallowing is more common in the south than in the west, and much more than in the north.

The following table shows the area of land and the quantity of manure used during the year 1920-21:—

Division.	Area under Crop.	Total Area Manured.	Area Manured per cent. of Area under Crop.	Manures Used.			
				Natural (only).	Natural and Artificial, in Combination.		Artificial (only).
					Natural.	Artificial.	
	acres.	acres.		loads.	loads.	cwt.	cwt.
Coastal ... ..	262,619	34,569	13·2	62,395	80,898	63,989	92,625
Tableland ... ..	406,384	72,296	17·8	8,220	1,036	316	50,861
Western Slopes ...	1,792,071	589,637	32·9	1,975	278	47	246,353
Central Plains ...	520,647	103,325	19·8	670	...	...	36,194
Riverina ... ..	1,476,551	1,198,111	81·1	3,073	1,615	405	506,032
Western ... ..	5,990	491	8·2	801	...	...	1,429
Whole State ...	4,464,262	1,998,429	44·8	77,134	83,227	64,757	933,434

The proportion of manured land in relation to the total cultivated in recent years has been somewhat less than one-half, although, as shown in the following table, a considerable increase in the use of fertilisers took place between 1907 and 1913, since when the area manured has declined with the area cropped.

The following table shows the total area cultivated, the total area manured, and the nature of the manures employed, in various years between 1907-8 and 1920-21.

Season.	Total Area under Crop.	Total Area Manured.	Area Manured per cent. of Area under Crop.	Manures Used—	
				Natural.	Artificial.
	acres.	acres.		loads.	cwt.
1907- 8	2,570,137	423,678	16·5	144,021	276,120
1913-14	4,568,841	2,226,742	48·7	166,753	1,010,596
1915-16	5,794,835	2,753,431	47·5	177,788	1,132,446
1918-19	3,890,844	1,780,254	45·7	180,734	856,074
1919-20	3,770,155	1,708,762	44·5	172,878	871,836
1920-21	4,464,342	1,998,429	44·8	160,361	998,191

Extensive manurial trials are made regularly by the Department of Agriculture with the view of encouraging the adoption of better methods, and of demonstrating to farmers that largely-increased yields result from scientific cultivation. It is in this important respect that much hope rests for the ultimate improvement of the low average wheat yield at present obtaining.

The sale of artificial manures is regulated by the Fertilisers Act of 1904, under the provisions of which measure the vendor is required to furnish to the purchaser a statement as to their nature and chemical composition. Further legislation has been urged for the more adequate protection of farmers.

#### SHARE-FARMING.

The system of agriculture known as share-farming has played an important part in the development of agriculture in New South Wales. It took its rise toward the end of the last century, and helped to overcome the difficulties which had retarded the extension of cultivation. Land holders could not obtain workmen to till large areas of their land, while new settlers were impeded for lack of cleared land, and of the necessary farming facilities, such as machinery, for which considerable capital was needed.

The following table shows particulars regarding the areas used for cultivation or dairying on shares during recent years :—

Season.	Holdings.	Share-farmers.	Total Area Farmed on Shares.
	No.	No.	acres.
1915-16	2,474	4,781	1,380,937
1916-17	2,395	4,358	1,222,007
1917-18	1,950	3,461	942,220
1918-19	1,530	2,675	652,658
1919-20	1,501	2,423	671,972
1920-21	1,668	2,761	736,327

The principles of the system are as follow. The owner leases his land, which is cleared, fenced, and ready for the plough, to the agriculturist for a period, and for the purpose of wheat-growing only. The farmer-tenant possesses the right to run upon the estate the horses necessary for working the farm, and the owner retains the right to depasture his stock when the land is not in actual cultivation. Up to a specified yield the parties to the agreement take equal shares of the produce, and any excess goes to the farmer as a bonus; the system, however, is subject to local arrangements.

Practically the whole of the area cultivated on the share-system is devoted to wheat-growing. The system reached its maximum development in 1915-16, when the area cultivated under it exceeded one-fifth of the total area under crop in the State. Since then the returns from wheat-growing have been bad on account of droughts and market difficulties, and share-farming has contracted more rapidly than other forms of cultivation.

Of the areas cultivated in 1920-21 on the share system, 285,006 acres were in the Western Slopes Division and 226,039 acres were in the Riverina.



## AGRICULTURAL AND PASTORAL LABOUR.

Particulars of persons above the age of 14 years who were regularly employed in farm work on a rural holding were collected in the year 1920-21; these were classified according to status, and the amount of the salaries and wages paid to those employees in receipt of remuneration was also ascertained. Temporary hands employed during harvesting and shearing operations, or by contractors doing rural work, or on other temporary work, were not included in the returns, and there are many workers who earn their livelihood from such casual employment. Persons principally engaged in domestic work were also excluded. The numbers of persons permanently employed in farm work on rural holdings were as follow :—

Capacity.	Males.	Females.	Total.
	No.	No.	No.
Owners and Lessees ... ..	66,785	2,292	69,077
Permanent Employees receiving wages...	37,472	2,463	39,935
Relatives not receiving wages ... ..	16,319	10,952	27,271
Total ... ..	120,576	15,707	136,283

There were in all 80,065 holdings recorded, so that in nearly 11,000 cases owners or lessees did not work on their holdings. The number of permanent wage-earners employed is surprisingly low.

Of the relatives not receiving wages, 7,997 males and 9,639 females above the age of 14 years were employed in the coastal districts, where dairying is the principal farming activity. This accounts for nearly 90 per cent. of the number of females employed, the remainder of the male relatives employed being uniformly distributed over the other divisions of the State.

The total amount of wages paid to permanent employees during the year was £4,982,232, in addition to board and lodging, &c., valued at £1,760,458, or a total of £6,742,690, the average remuneration being £169 per annum, or £3 5s. per week inclusive of females and juveniles.

## THE DEPARTMENT OF AGRICULTURE.

Considerable attention is paid by the Government to the development of the agricultural industry, but great scope still exists for educational and scientific work in the industry in order that the wealth resources of the State may be fully and properly exploited to the advantage of the community.

The Department of Agriculture, created in 1890 to advance the interests of the farmers and fruit-growers of New South Wales, deals with all matters essential to agriculture. Its practical functions include the collection of information by scientific investigation and practical experiments relating to the causes of the failure of crops, improved methods of cultivation, means of combating pests, the use of fertilisers, matters of drainage and irrigation, new plants and new implements, the disposal of surplus products, and the transport of produce. Such information is placed at the disposal of the agricultural producers of the State, and other assistance is rendered to them.

The officials answer many inquiries for advice or assistance, and visit various parts of the country throughout the year to give demonstrations to the farmers, and to advise generally regarding agricultural methods.

During the last few years the practical services of the Department have been extended greatly by conducting experiments with various crops, fertilisers, and cultivation methods on the lands of private farmers. These amount to demonstrations of the value and efficiency of the scientific methods recommended by the Department, and they are having a marked influence on farm practice in many parts of the State. Local officers of the Department supervise these trials and bring the results under the notice of farmers in the vicinity.

The *Agricultural Gazette*, the official organ of the Department, is issued monthly. It presents to the farmers of the State the results of scientific researches and of the investigations of official experts.

Numerous bulletins and leaflets are issued for the guidance of various classes of rural workers, and most of the publications of the Department are supplied free to persons engaged in rural industries.

Country newspapers are furnished weekly with notes describing the investigations and educational operations of the Department with respect to improved methods of agriculture, dairying, stock-raising, etc.. Efforts have been made to develop many phases of primary production, fallowing, rotation in cropping, and the cultivation of maize being specially treated.

The principal heads of receipts and expenditure of the Department of Agriculture during the year ended 30th June, 1921, were as follow :—

<i>Receipts.</i>		£	<i>Expenditure.</i>		£
Agricultural College, Experiment			Agricultural College, Experiment		
Farms, etc. ....	71,364		Farms, etc. ....	170,709	
Fees for fumigation, etc. ....	8,297		Bulk Handling of Wheat, Grain		
Miscellaneous ....	2,192		Elevators ....	851,808	
Stock Branch ....	10,868		Administrative ....	85,808	
Bulk Handling of Wheat, Grain					
Elevators ....	18,080			1,108,325	
	110,801				
Less Refunds ....	277		Less Refunds ...	24,082	
				1,084,243	
			Stock and Brands, Pastures Pro-		
			tection ....	89,779	
			Botanic Gardens, etc. ....	44,515	
			Commercial Agents ....	5,469	
Total ...		£110,524	Total ...		*£1,224,006

\* In addition there was expended £5,676 by the Stores Supply Department and £1,334 by the Resum Properties Department on behalf of the Department of Agriculture.

### *Agricultural Bureau.*

An Agricultural Bureau has been established under the direction of the Department. Its object is to foster the establishment in rural centres of societies, which will enable primary producers to meet together regularly for the purpose of exchanging ideas and experiences on every kind of subject that touches rural life, and it aims especially at making scientific methods more popular. Assistance is rendered by the officers of the Department, many of whom visit the branches from time to time to deliver lectures and conduct practical demonstrations in some subject of local interest. The movement has exhibited already a tendency toward co-operation in the purchase of stores, and in two or three cases regular co-operative societies are

growing out of the branches of the Bureau. The social side is not neglected, and some branches have ladies' sections. In this way the Bureau is assisting to make rural life more attractive.

Government assistance is granted in the form of subsidies payable to each branch at the rate of 10s. for every £1 of membership fees. The Bureau was established in 1911, and at the 30th June, 1921, there were 150 active branches.

#### *Agricultural Education and Experiments.*

In order to obtain a knowledge of local conditions and to afford an education in agriculture on scientific bases, the Government has established the Hawkesbury Agricultural College, a number of experiment farms, several viticultural nurseries, an apiary, a stud-horse farm, and an agricultural training farm, besides farmers' experiment plots throughout the State.

The system of agricultural training in vogue in the educational institutions of New South Wales is not nearly so extensive as those of some other countries, but in the primary schools in 1921 nearly seven thousand pupils received some training in elementary agriculture, while school gardening was more commonly taught. Specialised tuition is given at various schools on the Murrumbidgee Irrigation Area, three secondary schools include agriculture in their curriculum, and two agricultural high schools have been established. A Faculty of Agriculture was established at the University in 1911; in 1921 there were 25 students attending lectures, and 2 research scholars.

Facilities are afforded for the accommodation of students at the various experiment farms. In addition, schools of instruction for dairy factory workers are held periodically, and winter schools for students of both sexes are held annually at Hawkesbury Agricultural College.

#### *Hawkesbury Agricultural College.*

The Hawkesbury Agricultural College provides accommodation for resident students, and imparts theoretical and practical instruction in a three-years' course, which embraces every department of agriculture. Instruction is given also in dairying, pig-raising, horse, sheep, and poultry-breeding; and experimental research work is conducted in connection with cereal and other crops, in cultivation with fertilisers, and in soil culture. All subsidiary branches of farm-labour are taught, including blacksmithing, carpentry, sheep-killing, bee-keeping, and other occupations incidental to the pursuit of agriculture. In January, 1922, there were nearly 200 regular students in residence.

Jersey dairy cattle and Romney Marsh sheep are bred, also stud pigs of various breeds, which are sold to farmers throughout the Commonwealth and New Zealand. In the poultry section the egg-laying competitions attract a large number of competitors from various parts of the State.

#### *Experiment Farms.*

Work of a general educational and research nature is conducted at the experiment farms, which have been established in various parts of the State with varying curricula, adjusted to meet local needs and climatic conditions. The aim is to disseminate better knowledge of the practice of agriculture in established industries, to encourage by example new activities suited to the locality, to demonstrate in a practical manner the agricultural possibilities of the State, and, in some cases, to afford instruction for students.

Particulars as to each farm are given in the following table:—

Farm.	Particulars (as at 30th June, 1921.)			Special Purposes.
	Area.	Students in Residence.	Fees Payable.	
	Acres.	No.		
Wagga Wagga .. .. .	3,220	31	1st year £20 2nd " £15	Specialises in seed wheat.
Bathurst .. .. .	752	18	do	Orchard and soil culture.
Wollongbar and Duck Creek	734	2	.. .. .	Stud farm—Dairy cattle and pigs.
Berry .. .. .	403	..	.. .. .	Stud farm—Dairy cattle.
Howlong Viticultural Station	224	..	.. .. .	Phylloxera-resisting vines.
Grafton .. .. .	1,075	..	.. .. .	Mixed farming suited to sub-tropical districts.
Glen Innes .. .. .	1,073	..	.. .. .	Mixed farming and fruit culture.
Cowra .. .. .	1,011	..	.. .. .	Specialists in seed wheat and cross-breeding with sheep.
Pera .. .. .	1,153	..	.. .. .	Artesian-bore water applied to orchard culture.
Narara .. .. .	100	..	.. .. .	Phylloxera-resisting vines.
Yanco .. .. .	2,045	1	.. .. .	Irrigation, ostrich farming and mule-breeding.
Nyngan .. .. .	5,049	..	.. .. .	Dry-farming. Merino sheep suitable for dry areas.
Coonamble .. .. .	1,945	..	.. .. .	Dry-farming. Wheat cultivation and sheep-farming.
Temora .. .. .	1,606	..	.. .. .	Specialises in seed wheat.
Condobolin .. .. .	1,348	..	.. .. .	Dry-farming. Suitable varieties of wheat.
Trangie .. .. .	9,736	..	.. .. .	Stud-merino farm, also specialises in wheat culture.
Bangaroo .. .. .	5,037	..	.. .. .	Stud farm—Horses.
Glenfield .. .. .	112	..	.. .. .	Veterinary experiments.
Griffith .. .. .	59	..	.. .. .	Mother-stock vineyard. Irrigated area.
Wauchope Apiary .. .. .	36	..	.. .. .	Study of diseases among bees.
Total .. .. .	36,748	52	.. .. .	.....

#### *Farrer Scholarships.*

The Farrer memorial fund was established by public subscription in honour of the late William J. Farrer, whose work in the production of new wheats has afforded great benefit alike to the industry and to the community. The money subscribed has been vested in trustees, and the interest is used for the Farrer research scholarship, the specific object of which is the improvement of wheat cultivation. The scholarship is granted to a candidate selected by the trustees from applicants possessing certain qualifications.

The selected scholar presents his results at the close of the year in the form of a paper, to be published by the trustees. At the end of the year the holder of the scholarship may be re-appointed, or a new selection made.

The Government Farrer scholarship is offered for competition amongst students wishing to enter the Hawkesbury Agricultural College with a special view to the study of wheat-cultivation.

The *Daily Telegraph* Farrer scholarship consists of a grant of books, apparatus, etc., to the value of £10, given each year by the *Daily Telegraph* Newspaper Co., Ltd., to the best first-year wheat student at the Bathurst or Wagga experiment farm.

#### STATE ADVANCES TO SETTLERS.

In order to afford better facilities for the financing of the rural industries and to assist struggling settlers, the Government, in 1899, inaugurated a system by which advances were made to settlers on the basis of the French Crédit

Foncier, at rates of interest and of repayment which were intended to be available for the benefit of every settler offering adequate security. The Act of 1899 has received several amendments, and in 1906 the powers of the Advances to Settlers Board were transferred to the Commissioners of the Government Savings Bank of New South Wales, and the maximum and minimum amount of advances were fixed at £2,000 and £50 respectively, repayable over a period of thirty-one years.

Up to the 30th June, 1921, the advances which had been made to settlers numbered 18,398, and amounted to £6,230,108, equivalent to £339 per loan, of which 11,256, representing £3,197,425, had been repaid, leaving 7,242 advances current at that date, the average balance of the principal being £473 per loan.

The operations of the bank relating to advances to settlers, at intervals since 1911, have been as follow :—

Year ended 30th June.	ADVANCES MADE.			REPAYMENTS.		BALANCES REPAYABLE.		
	Number.	Total Amount.	Average.	Number.	Total Amount.	Number.	Total Amount.	Average.
		£	£		£		£	£
1911†	838	331,693	395	743	185,420	3,754	1,074,359	286
1913†	1,386	771,272	556	414	116,476	5,094	2,051,132	403
1915	860	387,715	451	436	171,617	5,860	2,514,078	429
1919	589	260,255	442	520	204,558	6,171	2,599,751	421
1920	1,102	642,170	583	819	338,036	6,454	2,903,886	449
1921	1,365	813,525	596	577	293,539	7,242	3,423,871	473

† Year ended 31st December.

In 1914 the Commissioners of the Government Savings Bank were empowered to make advances upon mortgage of irrigation farm leases. The advances made numbered 122, representing a total sum of £20,805, but no advances have been made by the bank under this authority for several years. Settlers on irrigation areas may now obtain advances directly from the Water Conservation and Irrigation Commission.

#### *Rural Bank.*

Under authority of the Government Savings Bank (Rural Bank) Act, 1920, steps were taken early in 1921 to establish a rural bank in New South Wales. The new bank was placed under the direction of the Commissioners of the Government Savings Bank, and it continued on an extended basis the operations of the Advances to Settlers Department, which was discontinued.

The primary object of the bank is to afford more extensive financial assistance to primary producers than is usually obtainable from other institutions, and thus to promote rural settlement and development.

The Commissioners are empowered to make advances upon mortgages of land in fee-simple, and of land held under conditional purchase or lease, settlement purchase or lease, and homestead grant or selection. The advances are made to repay existing encumbrances, to purchase land, to effect improvements, to utilise resources, or to build homes. By this means material assistance is afforded both to prospective and to established settlers.

Funds are obtained from deposits at current account, fixed deposits, and the issue of deposit stock, rural bank debentures, and inscribed stock. Interest is allowed on fixed deposits at current bank rates, and current accounts are subject to trading bank conditions.

Loans are made only to persons engaged in primary production, or in closely-allied pursuits. The loans are of three kinds:—(a) Overdrafts on current account; (b) instalment loans, repayable by equal half-yearly instalments of interest and principal extending over thirty-one years; and (c) fixed loans for limited terms. The security required may be land, either freehold or held on any Crown tenure, stock, plant, crops, wool, etc.

The Commissioners are empowered to make advances to assist the subdivision of large estates. Accordingly, loans up to 80 per cent. of the market value of farms are made on lands which have a freehold or certificated conditional purchase title, and are partially improved. Individual loans, however, are limited to a maximum of £2,000. In order to facilitate negotiations of sale, the Bank, after inquiry, issues certificates either to vendors or purchasers as to the amount it is prepared to advance on any land.

Some 136 branches of the bank have been opened throughout the State, usually in conjunction with a branch of the Savings Bank. The current business of the Advance Department was taken over, so that the bank commenced operations with outstanding advances amounting to nearly £3,250,000, secured by mortgages from 7,000 borrowers.

#### *Rural Industries Board.*

In 1915 various schemes were inaugurated by the Departments of Agriculture and Lands to render financial aid in the form of loans, repayable by instalments, to farmers desirous of clearing areas of land for wheat-planting, and to assist necessitous farmers. The operations of these schemes were of comparatively small scope until 1919, when, owing to the long-continued and severe drought, many applications for assistance were received. The Government promptly voted £75,000 to meet the situation, and relief was distributed in the form of orders for fodder, household supplies, and fertilisers, while seed wheat was supplied under a separate scheme. An amount of £60,000 was advanced to about 1,000 applicants on the security of second and third mortgages and of crop liens. Dairy-farmers as well as wheat-growers benefited under the scheme.

The drought continuing, a serious situation developed, and £2,000,000 was raised locally by loan for relief purposes. On the 1st December, 1919, the Rural Industries Board was created to perform the work of dispensing assistance, and it was aided by eighty-five country boards. The purposes for which the board was constituted were (a) to take over, consolidate, and collect all advances under previous schemes since the year 1915; and (b) to extend the scope of relief given to necessitous farmers in order to enable them to sow crops during 1920. Relief measures were confined to cases where ordinary commercial assistance was not forthcoming, and a tentative limit of £500 per individual was fixed. It was found that many settlers had been suffering from the effects of drought for several years and were already heavily indebted. Usually promissory notes were accepted in these cases as the only security.

The transactions of the board covered a very large portion of the State, and were chiefly among small farmers unaccustomed to business or in remote districts. Altogether 17,885 applications for relief were dealt with during the drought of 1919–20, and loans amounting to approximately £1,600,000 were made to 11,204 individual farmers.

The operations of the Rural Industries Board to 30th April, 1922, involved a total outlay of £2,348,737, made up as follows:—

Head of Expenditure.					£
Seed Wheat	...	...	...	...	540,264
Fodder	..	...	...	...	1,284,713
Household Supplies	...	...	...	...	59,623
Cornsacks	...	...	...	...	251,353
Cash Advances	...	...	...	...	184,139
Fallowing Advances	...	...	...	...	15,277
Miscellaneous...	...	...	...	...	13,368
Total ...					2,348,737

while the advances and repayments as at 30th April, 1922, under all schemes since 1915 were:—

Nature of Advance.			Advances.	Repayments.
			£	£
1915 {	Seed Wheat and Fodder	...	377,407	353,093
	For Clearing Land	...	18,986	17,158
	Loans	...	14,791	11,623
1916	Cornsacks	...	1,660	1,387
1917	Seed Wheat	..	450	336
1918-19-20 For Fallowing			30,076	16,066
1919 {	Seed Wheat	...	60,875	50,003
	For Holdings of Hay	...	683	501
	To Necessitous Farmers	...	50,000*	
1920	Advances by Rural Industries Board		1,550,000*	1,181,712
1921	" " " "		29,242	
Total ...			2,134,170*	1,631,879*

\*Approximately.

Where advances were made to wheat-growers, repayments were deducted usually by arrangement from the proceeds of the harvests of 1920-21 and 1921-22. In about 2,000 cases portions of the debts were allowed to stand over until 1922.

#### INQUIRY INTO THE AGRICULTURAL INDUSTRY.

In September, 1920, a Select Committee of the Legislative Council, with Sir Joseph Carruthers as Chairman, was appointed to inquire into the "Conditions and prospects of the agricultural industry of New South Wales."

This inquiry was very exhaustive, voluminous evidence was taken, and a comprehensive report was issued in December, 1921. A brief summary of the conclusions arrived at by the committee was published in the Year Book for 1920.

#### WHEAT.

The mild climate of New South Wales makes it possible to work the soil on scientific lines throughout the year, and admits of the utilisation of paddocks for pastoral purposes after the crop has been harvested.

The area suitable for wheat-growing in New South Wales may be defined roughly as that part of the State which has sufficient rainfall—about ten inches between April and October—to admit of ploughing operations at the right time of the year, to cover the growing period of the wheat plant and to fill the grain during the months of September and October; or in the case of districts where the rainfall in these months is less, to counteract the deficiency by the increased falls in the earlier or later months.

In his evidence before the Select Committee of Inquiry into the Agricultural Industry in 1921, Mr. F. B. Guthrie, chemist, Department of Agriculture, stated that in his opinion approximately 26 million acres could

be cultivated profitably for wheat in New South Wales. Of this area he assumed that one-fifth would be cultivated for wheaten hay, leaving 21 million acres as the maximum area to be cropped for grain. Assuming that the average yield of the ten years, 1912-21, were maintained, this land, if sown with wheat, would produce an average crop of nearly 250 million bushels, with an annual yield ranging, on the experience of the last ten years, from 63 million to 375 million bushels. The largest crop yet produced has not exceeded 67 million bushels, grown on 4,189,000 acres in 1915-16.

The coastal region is unsuited to wheat on account of the absence of suitable soils and of the prevalence of rust and other diseases occasioned by heavy rains. Large areas on the Tablelands are also unfavourable for wheat-growing, and the far West has insufficient rainfall to make wheat-growing profitable except under extraordinary conditions. Between the Tablelands and the Western Division lie considerable tracts of slope and plain eminently adapted to the cultivation of wheat. It is in this area, and particularly in the southern and central portions, that most of the wheat of the State is grown, and it is here that the prospects of a large development in the wheat industry in the near future are brightest.

Formerly, land with an average rainfall of less than 20 inches was excluded from the area considered safe for profitable wheat-growing; and it was estimated that with the exception of the coastal and certain other unsuitable districts, the area with an average annual rainfall of not less than 20 inches, suitable for wheat-growing, covered from 20 to 25 million acres.

It is estimated that since 1904 the wheat belt has been extended westward and increased by about 13 million acres. Of this increase the greatest extension has taken place in the southern wheat areas, especially in the Riverina Division, where the spring rainfall is more suited than on the Northern Plain to filling and maturing the grain.

If wheat could be grown profitably in New South Wales on areas with an annual fall of 16 inches, another 9,000,000 acres would be added to the wheat belt. Improved methods of culture have enabled farmers to secure profitable returns even in districts of scanty rainfall. Much depends on the evolution of improved wheat-plant types and on the improvement of cultural methods and farming practice. Investigations are being made into the possibilities of dry-farming on the far western lands on the north bank of the Murray River.

On the map attached to this Year Book are shown the experience lines of profitable wheat cultivation, that is, the western boundaries of the area in which wheat has been successfully cultivated, as determined in 1904 and in 1912, the western boundary of the area over which the average rainfall is not less than 10 inches during the wheat-growing period being defined also.

In determining the present wheat experience line, due consideration was given to low yields attributable to bad farming, and other preventable causes. The average wheat yields for various districts do not always disclose accurately the possibilities of the region. Notwithstanding the improvement made during recent years in cultural methods generally, the majority of farmers do not obtain the maximum results possible under good treatment. The conservation of moisture by fallowing and by subsequent cultivation has not received sufficient attention, and the use of artificial manures should be more general.

On page 758 appears a table showing the area of the various divisions of the State, the average rainfall, the area under wheat, and the number of sheep and cattle in each division. Reference should be made to this table in connection with the above matter.



The following statement shows the development of wheat-growing as an industry in Divisions of the State :—

Division.	Area under Wheat for Grain.			Proportion in each District.		
	1905-06.	1915-16.	1920-21.	1905-06.	1915-16.	1920-21.
	acres.	acres.	acres.	per cent.	per cent.	per cent.
Coastal ... ..	10,845	5,217	3,453	0·6	0·1	0·1
Tableland—						
Northern ... ..	14,546	7,642	12,628	0·7	0·2	0·4
Central ... ..	113,636	169,546	110,930	5·9	4·0	3·5
Southern ... ..	13,538	20,888	11,335	0·7	0·5	0·4
Total ... ..	141,720	198,076	134,893	7·3	4·7	4·3
Western Slopes—						
North ... ..	217,992	434,088	305,763	11·2	10·3	9·8
Central ... ..	343,928	693,099	580,028	17·7	16·6	18·5
South ... ..	350,780	901,799	500,988	18·1	21·5	16·0
Total ... ..	912,700	2,028,986	1,386,779	47·0	48·4	44·3
Central Plains ... ..	249,360	491,563	442,817	12·9	11·9	14·2
Riverina ... ..	620,616	1,463,728	1,158,811	32·0	34·9	37·1
Western ... ..	4,206	1,295	624	0·2	...	...
All Divisions ... ..	1,939,447	4,188,865	3,127,377	100·0	100·0	100·0

The season 1920-21 was the most prolific yet experienced by wheat-farmers, but the area cultivated was far below that of 1915-16, which was the largest on record. The distribution of the area from year to year shows that the industry is more stable in the Southern and Central interior than elsewhere in the State. Considered relatively and absolutely, the Riverina shows the greatest development, and improvements of less note are to be observed in the Central Plains and in the Western Slopes Divisions. These three divisions combined embrace 95 per cent. of the total area sown.

This analysis is made more complete by a consideration of the yield of wheat in these Divisions in the same seasons.

Division.	Yield of Grain.			Average Yield per Acre.		
	1905-06.	1915-16.	1920-21.	1905-06.	1915-16.	1920-21.
	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
Coastal ... ..	63,638	33,881	55,170	5·9	6·5	16·0
Tableland—						
Northern ... ..	213,706	79,172	240,495	14·7	10·4	19·0
Central ... ..	1,159,137	3,242,286	2,061,888	10·2	13·2	18·6
Southern ... ..	153,789	419,456	212,613	11·4	20·1	18·8
Total ... ..	1,526,632	3,740,914	2,514,996	10·8	18·9	18·6
Western Slopes—						
North ... ..	2,221,094	5,616,454	6,799,197	10·2	12·9	22·2
Central ... ..	3,037,476	11,325,164	10,474,032	8·8	16·3	18·1
South ... ..	4,603,764	16,426,101	8,275,029	13·1	18·2	16·5
Total ... ..	9,862,334	33,367,719	25,548,258	10·8	16·4	18·4
Central Plains ... ..	2,018,194	4,601,866	8,190,267	8·1	9·4	18·5
Riverina ... ..	7,243,888	25,011,778	19,310,564	11·7	17·1	16·7
Western ... ..	22,514	8,752	5,745	5·4	6·8	9·2
All Divisions ... ..	20,737,200	66,764,910	55,625,000	10·7	15·9	17·8

In 1919-20 practically the whole of the wheat crops of the State failed on account of the adverse season, but in 1920-21, although sowing was delayed, bountiful rains aided the production of the second largest harvest and the highest average yield yet obtained in New South Wales.

An interesting feature of the particulars of average yields is that usually wheat is most prolific in the Southern portions of the State. In 1920-21, however, the highest average yield of any district, 22·2 bushels, was obtained from extensive crops on the North-western slopes, and, contrary to the usual experience, the average yields were greatest on the tablelands and in the northern part of the State.

The following statement shows the area under wheat for grain and for hay, together with the total production, average yield per acre, and quantity exported since 1897-98, when a surplus of wheat for export was first produced :—

Season.	Area under Wheat.				Yield.		Average yield per acre.		Quantity of Wheat and Flour exported overseas in calendar year following season.
	For Grain.	For Hay.	Fed-off.	Total.	Grain.	Hay.	Grain.	Hay.	
	acres.	acres.	acres.	acres.	thousand bushels.	thousand tons.	bushels.	tons.	thousand bushels.†
1897-98	993,350	213,720	*	1,207,070	19,560	182	10·6	·85	582
1898-99	1,319,503	312,451	*	1,631,954	9,276	177	7·0	·57	437
1899-00	1,426,166	414,813	*	1,840,979	13,604	341	9·5	·82	865
1900-01	1,530,609	332,143	*	1,862,752	16,174	348	10·6	1·05	4,788
1901-02	1,392,070	312,358	*	1,704,428	14,809	287	10·6	·92	2,914
1902-03	1,279,760	320,588	*	1,600,348	1,585	76	1·2	·24	154
1903-04	1,561,111	286,702	*	1,847,813	27,334	452	17·5	1·58	9,772
1904-05	1,775,955	284,367	*	2,060,322	16,464	207	9·3	·73	5,661
1905-06	1,939,447	313,582	*	2,253,029	20,737	306	10·7	·97	5,338
1906-07	1,866,253	316,945	16,744	2,199,942	21,818	403	11·7	1·27	6,246
1907-08	1,390,171	365,925	129,313	1,885,409	9,156	198	6·6	·54	962
1908-09	1,394,056	490,528	104,202	1,989,086	15,433	427	11·1	·87	4,866
1909-10	1,990,180	380,784	5,825	2,376,789	28,532	566	14·3	1·49	12,111
1910-11	2,128,826	422,972	61,458	2,613,256	27,914	468	13·1	1·11	14,428
1911-12	2,380,710	440,243	80,731	2,901,684	25,088	423	10·5	·96	10,172
1912-13	2,231,514	704,221	31,557	2,967,292	32,487	780	14·6	1·11	17,116
1913-14	3,205,397	534,226	23,393	3,763,016	38,020	588	11·9	1·10	20,038
1914-15	2,758,024	569,431	815,561	4,143,016	12,831	355	4·7	·62	785
1915-16	4,188,865	879,678	53,702	5,122,245	66,765	1,212	15·9	1·38	23,514
1916-17	3,806,604	633,605	53,101	4,493,310	36,598	814	9·6	1·28	21,262
1917-18	3,329,371	435,180	63,885	3,828,436	37,712	485	11·3	1·11	12,650
1918-19	2,409,669	613,444	204,161	3,227,374	18,325	517	7·6	·84	19,694
1919-20	1,474,174	716,779	877,596	3,068,540	4,388	355	3·0	·49	427
1920-21	3,127,377	520,555	15,420	3,663,352	55,625	822	17·8	1·58	41,746
1921-22	3,202,610	468,930	17,579	3,689,110	42,650	580	13·3	1·24	*

\* Information not available.

† Flour has been expressed as wheat at 1 ton of flour per 50 bushels of wheat.

From this record of twenty-four years' experience it will be observed that a poor wheat yield was obtained at intervals of more or less regular recurrence, viz., in the years 1898-9, 1902-3, 1907-8, 1914-15, 1918-19 and 1919-20, and that unfavourable seasons were particularly prevalent in the past seven years. But the remarkable recuperative powers of the State were demonstrated in the season 1920-21.

The area under wheat increased from 1½ million acres in 1897-8 to 2½ millions in 1905-06. In the following seasons a decline was apparent, but a marked improvement took place in 1909-10, and thereafter the area increased rapidly, especially in the period 1912-15, when the maximum of over 5 million acres was reached. The decreases in the later seasons have been due mainly to a shortage of labour, unfavourable ploughing seasons, and difficulties in regard to the disposal of the harvest: moreover, the high prices obtainable for sheep and wool until the end of 1920 caused many farmers to substitute sheep-raising for wheat-growing.

Although the exportable surplus has varied in year to year, it is apparent that, since 1910, the State's export trade in wheat has been of important dimensions.

*Average Yield.*

The average yield of wheat in New South Wales is subject to marked fluctuations by reason of the widely divergent nature of the seasons. The highest yields have been recorded after the worst droughts, and, besides giving dramatic proof of the advantages of fallowing, have gone far to make immediate compensation for the losses sustained. The lowest yield on record was that of the 1902 season, being only 1·2 bushels per acre, while the highest—17·8 bushels per acre—was harvested in 1920-21 after the severe drought of 1918-20. During the past ten years the general average yield has been 11·62 bushels per acre. This yield is considerably below that which was obtained prior to the expansion of the wheat industry, but in those early years only some of the best wheat lands were tilled. However, a noticeable improvement has been apparent in the last ten years, although the general average for that period has been kept low by the occurrence of no less than four adverse seasons. In decennial periods the averages have been :—

Period.	Average Yield per acre.	Period.	Average Yield per acre.
1872-1881	bushels. 14·71	1902-1911	bushels. 11·04
1882-1891	13·30	1912-1921	11·62
1892-1901	10·02		

This yield does not compare favourably with the yields usually obtained abroad, even in the large wheat-producing countries, while smaller producing countries, particularly those situated in the colder climates, show far greater average yields :—

Country.	Period.	Average Yield per acre.	Country.	Period.	Average Yield per acre.
United Kingdom ...	1914-1920	bushels. 31·6	New South Wales ...	1912-1921	bushels. 11·6
New Zealand...	1914-1920	26·1	Australia ...	1912-1920	11·2
Canada ...	1914-1920	15·4	Russia (proper) ..	1909-1918	10·3
United States ..	1914-1920	14·6	Argentina ...	1914-1920	9·7

It is believed that, when more scientific methods of cultivation are widely adopted in New South Wales, and land is properly fallowed, tilled, and manured, the yield per acre will be increased considerably; and a further favouring factor exists in the great possibilities that attach to the improvement of wheat types by plant-breeding. However, it is anticipated that the warm climate and the prevalence of hot winds during the ripening period will always militate against a high average yield being obtained in New South Wales, such as is obtained in more humid countries.

*Size of the Wheat Farms.*

The expansion of the wheat industry has been brought about more by reason of the fact that growers have cultivated larger areas than by any marked increase in the number of growers, although in bad seasons, such as 1918-19-20, it was evident that many former growers did not plant crops. If it be considered that, in normal seasons, a farm of less than 250 acres devoted exclusively to wheat will not provide subsistence for a farmer and his family, it is apparent, in view of the low average area, that wheat-growing in many cases must be conducted in conjunction with other pursuits, and that in adverse seasons many farmers derive a living from sources other than agriculture.

The following table illustrates the recent development of wheat-growing in respect of number and average size of areas sown :—

Year.	Holdings on which Wheat was grown.	Total Area sown with Wheat.	Average Area per Holding devoted to Wheat.
	No.	acres.	acres.
1900-01	20,149	1,862,752	92
1905-06	19,049	2,253,029	118
1915-16	22,453	5,122,245	224
1918-19	17,281	3,227,374	187
1919-20	16,266	3,068,540	188
1920-21	17,790	3,663,352	206
1921-22	18,625	3,689,110	198

The following table provides a summary of the areas of holdings on which wheat was grown for grain in the season 1920-21, arranged in groups according to the area cropped for grain :—

Area cropped for Grain.	Holdings.	Wheat-grain.		
		Area cropped.	Production.	Average per acre.
acres.	No.	acres.	bushels.	bushels.
1-49	3,871	80,398	1,381,116	17·2
50-299	8,480	1,285,186	23,270,817	18·1
300-999	3,093	1,407,709	24,936,471	17·7
1,000-1,999	171	218,046	3,818,931	17·5
2,000-10,484	38	136,038	2,218,023	16·3
Total ...	15,658	3,127,377	55,625,358	17·8

In this table wheat-farms are divided somewhat arbitrarily into five classes graded according to the area cultivated. Those where less than 50 acres

are cultivated may be considered to be held by growers earning their livelihood principally in other directions; these number 3,871, or 24·7 per cent. of the total; where the areas cultivated range from 50 acres to 299 acres growers may be considered to draw their sustenance from wheat-growing in a degree ranging from partial to complete dependence; these number 8,480, or 54·2 per cent. of the total; where the area cultivated exceeds 300 acres, it may be considered generally that hired labour is employed in connection with the whole of the operations, or that more than one grower is involved.

In all, areas of less than 30 acres in extent were sown with wheat for grain on 2,705 farms. The total number of areas under 100 acres in extent sown with wheat for grain was 6,057; from 100 to 199 acres, 3,771; from 200 to 299 acres, 2,523; from 300 to 399 acres, 1,379; and from 400 to 499 acres, 755; the number in successive groups of 100 diminished rapidly thereafter. Of the 38 wheat crops exceeding 2,000 acres, 22 were less than 3,000 acres in extent. The largest area harvested for grain was 10,484 acres.

Turning to the question of productivity, it will be observed that the average yield showed a definite relationship to the amount of land cultivated. The most productive areas were those from 50 to 399 acres in extent, where it may be assumed that crops received a full measure of the personal attention of growers, and the yield was much greater than in the smaller areas where wheat-growing received divided attention, or in larger areas, where the same measure of personal attention was probably not given by the grower. This conclusion, however, requires modification, because larger proportions of the smaller areas were cropped for hay and green fodder, and these usually embraced the inferior portions of the crop. Again, in some cases, the average yield was not inversely related to the area sown. The highest average yield in any group was 20·8 bushels per acre from two crops of between 6,000 and 7,000 acres in area, the next highest being 19·2 bushels per acre from 22 crops between 2,000 and 3,000 acres in extent.

In 1920-21 2,132 farmers sowed wheat for hay or green fodder only, and 2,705 others cultivated less than 30 acres for grain. The number of farmers who cultivated wheat for grain on a commercial scale was, therefore, less than 13,000.

#### *Consumption of Wheat in N.S.W.*

Since the abolition of the system of interstate book-keeping by the Commonwealth Department of Customs in 1910, it has been difficult to obtain information as to the extent of wheat movements interstate, and thus it has not been possible to estimate satisfactorily the consumption and export of wheat as regards New South Wales. Absolute accuracy, therefore, is not claimed for the analysis of the experience since 1910 in the following table, but it is considered to be fairly reliable. Allowances for the carry-over between periods have not been made, but it is likely that these are considerable only after large crops. A close approximation to the net average annual consumption may be made by choosing a lengthy period beginning and terminating in years when the carry-over was nil or negligible. Such periods are adopted in the table shown below. For 1921, particulars of stocks and of inter-state movements of wheat were collected specially.

As harvesting operations do not begin until November, and new wheat is not generally marketed until the end of the year, the consumption and export years have been made to coincide with the calendar years. The statement

shows the yield, net exports, and apparent consumption per head in periods since 1892, flour being included at its equivalent in wheat.

Period.	Average Annual Crop.	Average net Annual Export.	Apparent Consumption per annum.			
			Including Seed Wheat.		Excluding Seed Wheat at 1 bushel per acre.	
			Total.	Per head.	Total.	Per head.
	thousand bushels.	thousand bushels.	thousand bushels.	bushels.	thousand bushels.	bushels.
1892-1896	5,904	(-)2,310	8,214	6·6	7,231	5·9
1897-1903	10,694	791	9,903	7·3	8,237	6·1
1904-1908	19,102	7,505	11,597	7·8	9,514	6·4
1909-1915	25,765	11,958†	13,807	7·9	10,395	5·9
1916-1920	31,523*	14,179†	17,344	8·8	13,688	6·9
1921	55,625	42,777	14,393†	6·8	10,704	5·1

\* Excludes "stock adjustments" of wheat pools; average, 503,000 bushels per year. † Partly estimated.  
 ‡ Allowing for stocks carried over. (—) Average net import.

The quantity of wheat used annually as flour for human consumption has varied from 5 to 5½ bushels of wheat per head in the past five years. As the area under wheat grew steadily until 1915, a proportionate increase in the amount of grain required for seed purposes has largely increased the total requirements per head of population. The amount used for poultry and stock purposes is apparently very variable, being affected by seasonal conditions and by the conditions which govern export. It is probable that the quantity consumed in the period 1916-1920 was somewhat above normal requirements. Not only were large quantities used for sheep fodder in the unusually severe drought of 1919-20, but great difficulty was experienced in disposing of wheat abroad, so that large quantities remained in the country for lengthy periods.

Including seed wheat, the requirements for the period 1916-20 probably did not exceed 8 bushels per head of population, on which basis, since prices were generally low and supplies usually abundant, the maximum requirements for local consumption may be estimated at between sixteen and seventeen million bushels annually.

However, the effective demand for wheat for local consumption is very elastic. In special circumstances, such as those of the year 1921, when prices rose to phenomenal heights—wheat for local consumption being at 9s. per bushel for nearly the whole year—consumption decreased markedly, being estimated at 14,400,000 bushels, or 6·8 bushels per head of population. The quantity of wheat exported overseas was nearly twice as great as in any previous year. Economy among consumers had its counterpart among producers, who were stimulated by high prices to realise on every available bushel. From the records of the Wheat Office it is ascertained that growers retained for their own use in 1921 only as much wheat as in 1920, when, as the yield was very low and the price very high, it may be assumed that all available wheat was marketed.

The extent to which economy in using wheat was practised in recent years in New South Wales may be shown by two tables.

The operations of compulsory wheat-pools in connection with successive harvests since 1916 reveal the amount of wheat retained by growers. This is estimated as follows :—

Season.	Total Yield.	Amount Pooled.	Amount Retained by Growers.			Average Price at country Sidings for Wheat Pooled.
			Total.	Seed Wheat* required for next Crop.	Other Purposes.	
	thousand bushels.	thousand bushels.	thousand bushels.	thousand bushels.	thousand bushels.	s. d.
1916-17	36,598	32,042	4,556	3,828	728	3 1
1917-18	37,712	33,714	3,998	3,227	771	3 10
1919-20	4,388	461	3,927	3,663	264	7 5
1920-21	55,625	51,689	3,936	3,689	247	7 5

\* At 1 bushel per acre.

The economy practised by growers in 1921 apparently reduced local consumption in that year to at least half a million bushels below its normal amount. The quantity of seed-wheat required cannot be stated accurately, the average quantity required per acre varying from three-quarters to one bushel; but in some cases, where early sowings are not satisfactory, a second sowing is made.

The economy in human consumption of wheat as flour in New South Wales in the last three years has proceeded in two ways,—(a) in the actual quantity of flour consumed; (b) in the amount of flour manufactured from a bushel of wheat. These developments are apparent from the following table :—

Year.	Weight of Bushel of Wheat of fair average quality.	Average Amount of Flour manufactured from each bushel of wheat milled.	Amount of Flour consumed per head of population.	Amount of Wheat consumed as Flour.	
				Per head of population.	Total.
	lb.	lb.	lb.	bushels.	thousand bushels.
1918-19	62.5	40.4	230	5.7	11,400
1919-20	61.0	41.2	223	5.4	11,167
1920-21	59.5	42.3	211	5.0	10,538

In considering the relationship between the first two columns, it should be recollected that the average weight per bushel of wheat, shown in the first column, relates to the wheat grown in the season, such wheat not being available for milling until December; the returns of wheat-milling operations relate to the period July to June, and to a large extent therefore include particulars of wheat grown in the preceding season. Very little wheat grown in 1919-20 was available for milling. To some extent the wheat used for milling is selected.

It is apparent that the average amount of flour derived from the wheat milled has increased considerably, and that, at the same time, the consumption of wheat as flour has diminished very much. Despite a large increase in the population, the economy in the use of wheat so effected was very considerable.

#### *World's Production of Wheat.*

Complete and uniform statistics of the whole of the wheat crops of the world are not available, and have been very defective in many countries since 1916. But for previous years returns were obtainable from nearly

every country where wheat was grown extensively, and, from these, reliable estimates of the fluctuations of the world's wheat production have been made. In the past thirty years a continuous increase has been apparent, despite the fact that very considerable fluctuations have been shown from season to season. The annual averages, so far as reported, from 1891 to 1915 are shown below :—

Period.	Annual average Wheat Yield of World.				
	Bushels.				
1891-1900	...	...	...	...	2,581,270,000
1901-1910	...	...	...	...	3,553,353,000
1911-1915	...	...	...	...	3,836,957,000

The returns from which these totals are compiled do not include all wheat-producing countries. It is estimated by the International Institute of Agriculture that the average annual yield of wheat throughout the world was approximately 4,417,000,000 bushels during the five seasons, 1915-1919.

An indication of the condition of the world's post-war production of wheat is made in the following table of production in pre-war years compared with 1920.

Country.	* Annual Production of Wheat in Thousand Bushels.		Country.	* Annual Production of Wheat in Thousand Bushels.	
	Average 1909-13.	1920.		Average 1909-13.	1920.
Europe—			America—		
Russia proper (b) ..	522,794	(a)	United States ..	686,691	787,128
France (b) ..	317,254	230,404	Canada ..	197,119	263,189
Italy ..	183,260	141,387	Argentina ..	157,347	214,140
Hungary proper (b) ..	156,523	(g) 29,139	Minor Countries (3) ..	37,625	42,212
Germany (b) ..	152,119	(h) 78,924			
Spain ..	130,446	138,606	Total, America ..	1,078,782	1,306,669
Roumania (b) ..	86,679	(e) 41,815			
United Kingdom ..	61,481	56,898	Australasia—		
Austria (b) ..	61,075	(c) 5,114	Victoria ..	27,656	39,469
Bulgaria (b) ..	43,725	(g) 41,189	New South Wales ..	26,717	55,625
Poland (b) ..	23,343	(f) 25,610	South Australia ..	22,843	34,259
Servia (b) ..	14,775	(d)(f) 4,126	Western Australia ..	5,671	12,248
Belgium ..	14,583	7,948	Queensland ..	1,250	3,707
Minor Countries ..	38,001	132,089	Tasmania ..	806	566
Total, Europe ..	1,806,058	....	Total, Australia ..	84,943	145,874
Asia—			New Zealand ..	7,885	6,872
India ..	350,736	376,884			
Minor Countries (5) ..	167,743	(a)	Total, Australasia ..	92,828	152,746
Total, Asia ..	518,479	....	Grand Total ..	3,578,961	....
Africa—					
Egypt ..	34,000	27,246			
Algeria ..	33,071	13,902			
Tunis ..	6,063	4,766			
Union of South Africa ..	4,620	6,630			
Total, Africa ..	77,754	52,544			

(a) Not available. (b) Old boundaries. (c) 1919. (d) 1918. (e) Includes Bessarabia.

(f) Unofficial estimate. (g) New boundaries. (h) Excludes Alsace Lorraine.

\* Information from the Year Book of the United States Department of Agriculture, 1920.

It was estimated that the yield in 1920, in thirty-one of the largest producing countries of the world, was approximately 7 per cent. greater than in 1919, and in 1921, in twenty-nine principal producing countries, the yield was approximately 3 per cent. greater than in 1920. The exportable surplus remaining in exporting countries on 1st January, 1922, was estimated to be approximately 431,900,000 bushels, of which 95,600,000 bushels were estimated to be in Australia. This estimate was based on preliminary data, and was in excess of the truth by about four million bushels as regards Australia. The exportable surplus of New South Wales was probably 27



million bushels on 1st January, 1922. So far as could be foreseen in March, 1922, the supply of wheat was in excess of the world's probable effective demand.

The following table, prepared by the International Institute of Agriculture, except as regards Australia, shows the position of the principal wheat-supplying countries of the world on 1st January, 1922, and is especially instructive of the relationship of local to world supplies :—

Countries.	Yield in growing season 1921.	Quantity available for export at beginning of season.	Quantities available for export, 1st January, 1922.
	million bushels	million bushels	million bushels
Canada ... ..	300·1	217·2	113·8
United States ... ..	794·8	271·3	83·6
Algeria ... ..	27·3	9·5	5·2
Tunis ... ..	11·5	3·2	1·7
Argentina ... ..	154·5	124·5	124·5
Australia ... ..	132·3	95·6	95·6
Other Countries ... ..	... ..	... ..	7·5
Total, exporting countries† ...	1,420·5	721·3	431·9
New South Wales ... ..	42·7	27·0	27·0

† Excluding India, where a surplus was not produced, 1921.

The seasons of the various countries begin as follow :—Canada, 1st September; United States, Algeria and Tunis, 1st July; Argentina and Australia, 1st January.

In 1921 Australia produced one-eleventh, and New South Wales one thirty-third part, of the wheat grown in the principal supplying countries of the world; the exportable surplus of Australia was considerably more than one-eighth, and of New South Wales rather more than one twenty-seventh, part of the exportable surplus of these countries. On 1st January, 1922, nearly one-quarter of the world's surplus stocks of wheat were in Australia, rather less than one-sixteenth being in New South Wales.

#### *Cost of Growing Wheat.*

Various attempts have been made to secure the data necessary to form an accurate estimate of the cost of production of wheat in New South Wales; but as, either for grain or for hay, this depends largely upon the methods of culture, the area cultivated, the distance from the railway, and the soil conditions, the experiences of individual farmers have caused a wide diversity of opinion.

The factor which is probably the main cause of these differences is the efficiency of the producers. Wheat being the product of a large number of farmers working independently, it is natural that there should be greater variation in regard to efficiency than in other industries, where the producers are assembled under the supervision of experts and where there are greater facilities for improving methods of production and for utilising labour and materials on the most economical basis.

The following estimates have been provided by Mr. A. H. E. McDonald, Chief Inspector of Agriculture, to indicate the average cost of producing wheat on unfallowed and on fallowed land. For the purposes of the estimates the area cropped annually is taken at 250 acres, viz., 230 acres for grain,

and 20 acres for hay for horse feed; to crop this area in alternate seasons under the system of fallowing, the total area of the farm would be at least 500 acres. The value of the land is assumed to be £6 per acre, and the value of the plant £680; as the farmer is engaged throughout the year in cultivating and other operations in connection with wheat-growing, an amount of £260 per annum is added to cover the value of the farmer's labour. Experiments made by the Department of Agriculture indicate that an average yield of 20 bushels per acre may be obtained from fallowed land, and the cost of production under the fallowing system is calculated on this basis, while 12 bushels per acre is taken as the yield from unfallowed land; in each case one bushel per acre is deducted for seed wheat, and special allowance is made for seed wheat as an item of cost, since expenses incurred in its production are included under the various headings.

In the case of fallowed land one crop is grown in two years. Where fallowing is practised, interest for two years is therefore allowed, but the stubble and herbage on the land are available for at least six months, and where sheep are kept, as is usually the case, this feed has some value. It is difficult to assess, but is probably worth at least three shillings per acre. Credit at this rate might reasonably be given to fallowed land on this account. When the land is not fallowed, the stubble is usually burnt and ploughing commenced in February or March.

The expenditure in the purchase of bags is a heavy item in the wheat-grower's account. Silos for bulk handling are now in working order in some of the important wheat-growing centres, and it is possible for farmers in these districts to reduce considerably the number of bags used by them. The silos have not, however, been in use long enough to enable a determination to be made of the actual saving which will accrue through bulk-handling.

The costs of production under conditions existing in New South Wales in June, 1922, were estimated as follows:—

Item.	Unfallowed Land.	Fallowed Land.
	Per acre. Total.	Per acre. Total.
Hypothetical net yield ... .. bushels	11 2,530	19 4,370
Costs—	£	£
Land—Interest, 250 acres, at £6 per acre, 6		
per cent. per annum ... ..	90	180
Plant—Interest and Depreciation, value £680...	90	90
Allowance for Repairs ... ..	20	20
Wages—Extra help ... ..	45	45
Fertiliser—Superphosphate, 6½ tons ... ..	44	44
Bags—At 10s. per doz. ... ..	35	60
Cartage of Wheat to Rail at 9d. per bag ...	32	55
Total cost, exclusive of allowance for farmer's labour ... .. £	356	494
	£ s. d.	£ s. d.
Cost per acre cropped for grain „ „	1 11 0	2 3 0
„ bushel on rail „ „	0 2 10	0 2 3
Total cost, including allowance of £260 for farmer's labour ... .. £	616	754
	£ s. d.	£ s. d.
Cost per acre cropped „ „	2 13 7	3 5 6
„ bushel, on rail „ „	0 4 11	0 3 5



Although this statement is expressed in terms of money, it does not purport to furnish any guide to the amount of profit of individual farmers. It is hypothetical, and shows, in a general way, the combined effects of prices and seasons on the operations of wheat-farmers in recent years, and demonstrates the causes of the decline in the industry since the record season 1915-16. Thus, while the returns of the season 1915-16 were high and those of 1920-21 remarkably high, the four intervening seasons were disastrous, failing in every case to repay the cost of production and to remunerate the farmer for his labour. That the decline was not greater in view of these poor returns is partly explained by the facts that the returns from wheaten-hay have been considerable, and, in practice, this crop was grown to a limited extent along with wheat for grain. Many wheat farmers also raise sheep for market, and excellent prices ruled up to the last quarter of 1920. But the serious effect on those engaged in the industry is clear from the fact that 10,000 farmers, mostly wheat-growers, in straitened circumstances, sought Government assistance in 1920 (see page 725). Wheat was grown on 22,453 holdings in 1915-16; 16,266 in 1919-20; 17,790 in 1920-21, and 18,625 in 1921-22.

*Grading, Handling, and Marketing Wheat.*

The maintenance and further development of the wheat industry in New South Wales is dependent largely on world demand, and on the efficiency of the facilities for gaining access to over sea markets on such conditions that it will pay farmers to grow wheat in preference to other products. The price of wheat for export is determined by world's parity, and it fluctuates with the world demand, which inevitably governs production. The market for the exportable surplus of local wheat is found chiefly in Queensland and in the countries and islands of the Pacific and Indian Oceans, although a considerable proportion is sent to Egypt and to Europe—principally England. The further extension of the market for local wheat in Europe is in some measure opposed by the competition of great wheat-producing countries nearer the market—the United States, Canada, and the Argentine—and the advantages they derive from shorter distances and lower freights. However, scope for a considerable expansion in the wheat trade with eastern countries still exists, and local growers will benefit in the course of years as the world demand increases.

Australian wheat for export is marketed on the basis of a single standard known as f.a.q., or fair average quality. In New South Wales the standard is fixed annually by a committee of members of the Sydney Chamber of Commerce and of two Government representatives. Samples obtained from each of the wheat districts are weighed on McQuirk's patent scale, and an average struck, which is used as a standard in all wheat export transactions.

The following comparison shows the standard in New South Wales for each of the past ten seasons, and the date on which it was fixed in each year :—

Year.	Date Fixed.	Standard Bushel.	Year.	Date Fixed.	Standard Bushel.
		lb.			lb.
1912-13	31st Jan., 1913	62½	1917-18	26th Feb., 1918	58½
1913-14	19th „ 1914	64	1918-19	30th Jan., 1919	62½
1914-15	15th Feb., 1915	60½	1919-20	6th Feb., 1920	61
1915-16	21st „ 1916	61	1920-21	10th Mar., 1921	59½
1916-17	12th Mar., 1917	56¾	1921-22	7th Feb., 1922	61

Under the present system the wheat is bagged on the farm and brought to the nearest railway station, whence that intended for export is carried in bags by rail to Sydney for shipment. At some of the stations the Railway Department has erected sheds, and a small charge is made for storage, but portions of large harvests have at times to be stored with scant shelter. At Darling Harbour, Sydney, where all the grain ships, except bulk carriers, are loaded, sheds and bag elevators have been provided.

The dislocation of shipping arrangements consequent on war conditions and the unprecedented harvest of 1915-16 resulted in the accumulation of quantities of wheat in this State far greater than those normally held. Owing to the disadvantages of long storage in bags, heavy losses of grain were caused by wet weather and plagues of mice and weevil. A Royal Commission of Inquiry was appointed by the Federal Government, and its report was presented in July, 1917. The erection of permanent storage facilities was recommended and the recommendation was carried into effect. The Wheat Storage Act of 1917 gave the Federal Government power to finance the States in the construction of wheat elevators. New South Wales took prompt advantage of the Act, and tenders were called for the necessary work before the close of the year.

The complete scheme provides for the erection of elevators at seventy-four country centres, with a total storage capacity of 15,400,000 bushels and of a terminal elevator in Sydney with a total storage capacity of 6,509,600 bushels.

Elevators at twenty-eight country centres were put into operation during the 1920-21 season, and were again used in 1921-22. They comprised 109 storage bins capable of holding 5,450,000 bushels of grain. About 2,000,000 bushels were handled by this method in 1920-21, and 4,335,155 bushels in 1921-22, but bulk handling is still in its initial stages. The work of erecting the terminal elevator has been completed, and the storage space provided there is utilised for the storage and shipping of wheat in bulk.

It is anticipated that 59 plants, with a storage capacity of 13,000,000 bushels at one filling will be in readiness for the 1922-23 harvest. The estimated cost of the works to 30th June, 1921, was £2,026,000.

For conveyance from country stations to the terminal, the Railway Commissioners converted a large number of 15-ton S trucks, and made them suitable for the carriage of grain in bulk. It has been decided to adopt as the standard design for handling bulk grain a 20-ton truck with a hopped bottom, so that it will be self-discharging; a number of these are under construction.

The question of bulk handling of wheat in New South Wales with special reference to the transition from bag handling, was the subject of careful inquiry by a Select Committee of the Legislative Council in November, 1920, and a report has been issued. An analysis of the findings of this committee appears in the Year Book for 1920.

#### *Wheat Freights.*

In the conditions governing the marketing of local wheat abroad, the availableness and cost of freight are very important factors. Owing to the greater distances from local than from American ports to European markets, freight rates are much heavier on Australian than on American cargoes, though both must be sold at world's parity, or at approximately the same price, yielding a smaller net return to local growers. During the war period this disparity was particularly marked owing to the very great increases in shipping costs, and the exportable surplus of wheat from New South Wales was sold principally to countries bordering the Indian and Pacific Oceans.

A comparative statement is given below of the freights ruling for bagged-wheat cargoes carried by steam vessels from Sydney to London in pre-war and recent years:—

Year ended 30th June.	Freight.				Year ended 30th June.	Freight.			
	Per ton.		Equivalent per bushel.			Per ton.		Equivalent per bushel.	
	s. d.	s. d.	d.	d.		s. d.	s. d.	d.	d.
1912 ...	17 6 to	30 0	6½ to	11	1918 ...	70 0 to	130 0	24½ to	47½
1913 ...	10 0 to	35 0	3½ to	13½	1919 ...	105 0 to	160 0	38½ to	58½
1914 ...	25 0 to	37 6	9 to	13½	1920 ...	114 0 to	143 0	41½ to	52
					1921 ...	46 8 to	120 0	16½ to	43½

The following comparative rates of freight ruling on 24th February, 1922, were extracted from the reports of the International Institute of Agriculture. A comparison of the rates of freight per bushel is added in order to show the disabilities under which Australian growers labour in comparison with growers in other countries, on account of their distance from world markets:—

Exporting Country.	Freight to United Kingdom.	
	Original Rates.	Rate per bushel.
Canada ... ..	5s. 0d. per 480 lb.	s. d. 0 7½
United States (northern range) ..	5s. 0d. per 480 lb.	0 7½
Argentina (down river) ... ..	31s. 3d. per 2,240 lb.	0 10
British India (Karachi) ... ..	23s. 6d. per 2,240 lb.	0 7½
Australia ... ..	52s. 6d. per 2,240 lb.	1 4½

#### Wheat Pools.

By reason of the abnormal conditions which prevailed in the wheat industry of New South Wales, in December, 1914, when war and drought had produced a difficult situation, the Government assumed control of the disposal of the whole of the wheat grown within the State, and this was done under authority of the Wheat Acquisition Act. A price of 5s. per bushel for wheat delivered at country railway stations was paid to farmers; there was practically no export, as the harvest of the season was insufficient to supply local needs.

The succeeding harvest (1915-16) was by far the largest yet gathered locally, and the difficulties which confronted its shipment and marketing led to an agreement being made between New South Wales and the other wheat-exporting States of the Commonwealth, whereby all wheat grown was "pooled," so that all growers might participate equitably in the proceeds of sales and all States might share on a common basis in shipping space as it became available through chartering agents responsible to the Commonwealth Government. An interstate ministerial committee, known as the Australian Wheat Board, performed the duty of realising the crop abroad, of fixing local prices, and of distributing freights between the States, while the handling and disposal of wheat within New South Wales was carried out by the State Wheat Office. The disposal of wheat was a slow and difficult process, and, pending sales, advances were made to growers by arrangement with the banks. This scheme was renewed for each subsequent season up to 1920-21.

All wheat grown in New South Wales to the end of the 1920-21 season was disposed of by the end of 1921, but up to June, 1922, only the accounts of the 1915-16 pool had been completed, as the necessary information regarding overseas sales from later pools was not available.

The following statement, however, indicates the financial position on 28th March, 1922, so far as it was known, and shows the magnitude of the transactions in each season:—

Season.	New South Wales.			Commonwealth (Four States).
	Advances to Growers.	Expenses Paid.	Total Expenditure.	Total Expenditure.
	£ (000)	£ (000)	£ (000)	£ (000)
1915-16	12,384	1,940	14,324	39,596
1916-17	5,003	1,950	6,953	31,308
1917-18	6,084	1,586	7,670	26,995
1918-19	3,099	616	3,715	19,029
1919-20	168	13	181	15,672
1920-21	19,127	1,930	21,057	51,600
All seasons ..	45,865	8,035	53,900	184,200

The amounts of payments made to growers in each season were determined by realisations—that is, by quantity sold and price obtained. So far as the financial situation permitted, these payments were made in advance of actual sales.

Pending realisation and payment, certificates were issued to farmers for the amount of wheat pooled. These could be made negotiable instruments by a simple process, and sold at ruling market rates. "Wheat scrip," as it is called, is officially listed by the Stock Exchanges. Farmers disposing of their certificates thereby dispose of all interest in them.

Particulars of the disposal of the wheat of the various pools of New South Wales as at 28th March, 1922, are shown below:—

Season.	Wheat Shipped.	Wheat Sold Locally.	Stock Adjustments.	Total Wheat Pooled.
	thousand bushels.	thousand bushels.	thousand bushels.	thousand bushels.
1915-6	29,147	29,257	...	53,404
1916-7	7,995	21,551	2,496	32,042
1917-8	10,775	22,772	167	33,714
1918-9	547	13,371	...	13,918
1919-20	...	457	4	461
1920-21	39,229	12,460	...	51,689
All Pools— 1915-1920	87,693	99,868	2,667	190,228

Of the quantity sold locally the equivalent of 12,501,025 bushels was exported subsequently in the form of flour. If comparison be made between the quantities pooled from each harvest and the total wheat yield in each season, it will be found that of 219,413,000 bushels of grain grown in the past six seasons, 190,228,000 were pooled, leaving 29,185,000 bushels which were retained by the growers, an average of 4,864,000 bushels per annum; but the amount retained in 1920-21, when high prices were realised, was 3,936,000 bushels.

At June, 1922, the position of the various pools was as follows :—That of 1915-16 had been completed and all accounts settled; those of 1916-17 and 1920-21 were known to be overpaid and awaited adjustment; and the accounts of those of 1917-18, 1918-19, and 1919-20 were awaiting completion, payments of 3d., 1d., and 4d. per bushel in these pools respectively having been made on 12th April, 1922.

Although the amounts deducted to cover dockages for inferior wheat and rail freights produced some divergence in the actual returns to individual farmers, the following is an estimate of the average receipts per bushel by farmers for their wheat, delivered at the nearest railway siding in each of the harvests controlled by a compulsory pool :—

Season.	Total Amount Paid per bushel.	Average Deductions per bushel.			Amount per bushel received by Farmers at Railway Siding.
		Estimated Freight.	Dockage.	Handling Charges.	
	s. d.	d.	d.	d.	s. d.
1915-16	4 10	3·60	·05	3·25†	4 3·1
1916-17	3 3	+	1·63	+	3 1·4
1917-18	4 3	4·09	·67	+	3 10·3
1918-19	4 11	4·30	·01	+	4 6·7
1919-20	7 10	4·58	·11	+	7 5·3
1920-21	7 6	+	·69	+	7 5·3

† Flat rate.

‡ Not deducted.

The above statement was compiled from the records of the Wheat Board of New South Wales.

#### *Voluntary Wheat Pool, 1921-22.*

In 1921 it was proposed by the Government of New South Wales to continue the system of compulsorily pooling wheat for marketing in the 1921-22 season, but the failure of the other wheat-growing States to co-operate, and the rejection of the necessary Bill by the Legislative Council, led to the abandonment of the project. A ballot of farmers earlier in the year had declared emphatically in favour of the pooling system of handling the harvest as against reversion to an open market. The form of pool most favoured was one "controlled by representatives elected by ballot of the wheat-growers."

A committee of farmers' representatives was formed in November, 1921, and a "voluntary pool" hastily organised. Arrangements were entered into whereby the Commonwealth Government agreed to advance 3s. per bushel to growers and 8d. to the pool for handling charges on all wheat received into the pool. The system of issuing negotiable certificates as receipts for wheat pooled by farmers was continued.

In all, 22,770,024 bushels of wheat were pooled by 12,264 growers out of a harvest of approximately 42,650,000 bushels grown by 18,625 farmers. To 5th June, 1922, the total quantity of wheat sold was 13,584,004 bushels, which realised an average price of 5s. 6½d. per bushel, f.o.b., Sydney. In all, £3,402,536 had been advanced to growers and a sum of £587,836 paid as expenses.

#### *Prices of Wheat.*

The following table gives the average prices per bushel ruling in the Sydney market in each year since 1898. The figures for earlier years, published in the Year Book for 1919, exhibit clearly the tendency towards a gradual reduction in the value of the cereal down to 1895, when the price was at the lowest of the series. In 1896, however, owing to a decrease in the world's supplies, the price rose considerably, and led to an extension of cultivation



in Australasia. In the early years, when local production was deficient, the price in Sydney was generally governed by the prices obtained in the markets of Australian States where a surplus had been produced. Since the development of the export trade, however, it has been determined by the price realised in London, which is usually equal to that ruling in Sydney, plus freight and charges; but from 1915 to the close of 1921 local prices were fixed by the Government.

The prices quoted are for an imperial bushel of 60 lb. in Sydney markets.

Year.	February.	March.	Average Value for Year.	Year.	February.	March.	Average Value for Year.
	per bushel.	per bushel.	per bushel.		per bushel.	per bushel.	per bushel.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1898	4 0	4 0	3 8	1911	3 7 $\frac{3}{4}$	3 5	3 6
1899	2 7 $\frac{1}{2}$	2 9	2 9	1912	3 9 $\frac{1}{4}$	3 8 $\frac{1}{2}$	4 1
1900	2 9	2 8	2 8 $\frac{1}{2}$	1913	3 6 $\frac{1}{2}$	3 7	3 2 $\frac{1}{2}$
1901	2 7	2 7	2 8	1914	3 8	3 9 $\frac{1}{2}$	4 1 $\frac{1}{2}$
1902	3 2	3 2 $\frac{3}{4}$	4 5	1915†	5 6	5 6	5 5
1903	5 11 $\frac{1}{2}$ *	5 9 $\frac{1}{2}$ *	5 13 $\frac{1}{2}$ *	1916†	5 1 $\frac{3}{4}$	5 0 $\frac{1}{2}$	4 10
1904	3 0 $\frac{1}{2}$	3 0 $\frac{1}{2}$	3 2	1917†	4 9	4 9	4 9
1905	3 4 $\frac{1}{2}$	3 3 $\frac{3}{8}$	3 5	1918†	4 9	4 9	4 9
1906	3 1 $\frac{5}{8}$	3 2 $\frac{1}{2}$	3 3 $\frac{1}{2}$	1919†	5 0	5 0	5 1 $\frac{1}{2}$
1907	3 0 $\frac{7}{8}$	3 1 $\frac{1}{2}$	3 10	1920†	8 5*	8 10*	8 7 $\frac{1}{2}$ *
1908	4 4	4 5 $\frac{1}{2}$	4 3 $\frac{1}{2}$	1921†	9 0	9 0	8 8
1909	4 0 $\frac{3}{4}$	4 6 $\frac{1}{2}$	4 9	1922†	5 2	5 11	5 7 $\frac{1}{2}$
1910	4 1 $\frac{3}{4}$	4 1	3 10				

\* Imported wheat.

† Officially fixed.

‡ Official price on trucks of wheat for flour for home consumption.

§ To June.

The high prices ruling in 1903 and 1920 were due to the almost entire failure of the previous season's crop, on account of which supplies were drawn from oversea and other States. In 1920 the price of 9s. per bushel was fixed for wheat for local consumption in accordance with the anticipated world's parity and in order to encourage farmers to continue wheat-growing. This price was maintained until the end of November, 1921.

An interesting comparison between the prices realised for wheat by the growers of three important exporting countries and one important consuming country is made in the following table:—

Crop Grown in—	Average Farm Value per Bushel of Wheat.			
	United Kingdom.	United States.	Canada.	New South Wales.†
	s. d.	s. d.	s. d.	s. d.
1914	4 0	3 8	...	5 5
1915	6 2	4 4	3 9	4 3
1916	6 7	5 3	5 5	3 1
1917	9 3	8 4	8 1	3 10
1918	9 0	8 6	8 5	4 7
1919	9 1	8 10	7 10	7 5
1920	9 5	9 8	6 9	7 5
1921	10 9*	3 10	3 11	4 8

\* Seven months.

† Crops in N.S.W. are marketed six months later than in countries of Northern Hemisphere.

The above averages have been taken from official publications of each country mentioned. Dollars have been converted at par rate of exchange,

in the cases of United States and Canada. The marked disparity between the values in Canada and the United States in 1919 and 1920 was largely due to the abnormal condition of the exchanges.

It is evident that, though in the early years of the war prices of wheat rose precipitately abroad and furnished excellent returns to farmers, local conditions were not favourable to such an increase. The price for local consumption was fixed at a point considerably below the price in world markets and, though a large exportable surplus was produced in 1915-16 and subsequent years, the scarcity of shipping made it impossible to realise promptly or at favourable rates, with the result that the returns to farmers were low and were paid in small sums intermittently. It was not until the scarcity caused by the bad seasons of 1919 that the price paid to the farmer in New South Wales rose to a level approaching that of other countries. A minimum price of 7s. 6d. per bushel was guaranteed by the Government for the 1920 crop in order to stimulate production.

According to a press report of 4th August, 1922, the Parliamentary Secretary to the British Board of Trade stated recently in the House of Commons that the average price of Australian wheat purchased by the Imperial Government during 1916-17 and 1919-20 was 5s. 2d. per bushel f.o.b. Australia, while the average price of wheat purchased elsewhere in the same periods was 9s. 3d. f.o.b. country of origin.

### MAIZE.

Before the development of the wheat-exporting industry of New South Wales maize-growing was the most extensive single agricultural pursuit. But it now ranks second in importance amongst the crops of New South Wales; its cultivation is small in comparison with that of wheat, and sufficient is not grown for local consumption.

Maize is cultivated chiefly in the valleys of the coastal rivers, where both soil and climate are peculiarly adapted to its growth. On the Northern Tableland also good results are obtained, and maize is gaining popularity as a profitable crop in rotation with hay.

The following statement shows the area under maize for grain during the season 1920-21, with the production and average yield in each Division:—

Division.	Area under Maize for Grain.	Yield.	
	Total.	Total.	Per Acre.
<b>Coastal—</b>	acres.	bushels.	bushels.
North ... ..	48,263	1,495,317	31·0
Hunter and Manning ... ..	31,406	995,397	31·7
Cumberland ... ..	3,138	143,931	45·9
South ... ..	11,642	422,997	36·3
<b>Total ... ..</b>	<b>94,449</b>	<b>3,057,642</b>	<b>32·4</b>
<b>Tableland—</b>			
Northern ... ..	20,874	396,891	19·0
Central ... ..	7,648	206,181	27·0
Southern ... ..	514	11,265	21·9
<b>Total ... ..</b>	<b>29,036</b>	<b>614,337</b>	<b>21·2</b>
<b>Western Slopes... ..</b>	<b>20,045</b>	<b>496,578</b>	<b>24·8</b>
<b>Central Plains, Riverina, and Western Divisions ... ..</b>	<b>575</b>	<b>7,443</b>	<b>12·9</b>
<b>All Divisions ... ..</b>	<b>144,105</b>	<b>4,176,000</b>	<b>29·0</b>

Maize-growing reached its highest development locally in 1910, and since then, despite a distinct rise in the price level, production has been decreasing. The following statement exhibits a comparison of maize-growing since the season 1900-1, with the average price in Sydney markets for each crop:—

Season.	Area under Maize for Grain.	Production.		Average Price per Bushel, Sydney Markets.
		Total.	Average yield per Acre.	
	acres.	thousand bushels.	bushels.	s. d.
1900-1	206,051	6,293	30.5	2 8
1910-11	213,217	7,594	35.6	3 0
1913-14	156,820	4,453	28.4	4 0
1914-15	143,663	3,175	22.1	5 2
1915-16	154,130	3,774	24.5	4 6
1916-17	155,378	4,333	27.9	3 10
1917-18	145,754	3,500	24.0	5 7
1918-19	114,582	2,092	18.3	8 0
1919-20	136,509	4,052	29.7	8 7
1920-21	144,105	4,176	29.0	6 6

It is somewhat difficult to understand why maize-culture has declined so considerably in New South Wales, and why, so far from there being any export trade in this important grain, supplies have been regularly imported. Perhaps among the reasons may be included the competition of more profitable pursuits, such as dairy-farming, the absence of an outlet in the form of an export trade, and the vagaries of the local market. In pre-war years the international trade in maize was somewhat less than half the volume of that for wheat. In the United States of America, where approximately 70 per cent. of the world's supply of maize is grown, it is by far the largest crop, but only about 2 per cent. of it is exported. The pre-war consumption in England was approximately eighty million bushels annually, imported principally from the United States and the Argentine.

No information is available as to the costs of producing maize in these countries, but it is apparent at least that the gross returns to growers in New South Wales are often considerably greater than those obtained in the United States, where the average yield per acre during the ten years, 1910-1919, has been 26.1 bushels per acre.

The estimated farm value per acre of maize in both countries is shown below. The estimate was made in both cases by multiplying the average number of bushels yielded per acre by the average price obtained by the farmer in each country:—

Growing Season.	Farm Value per acre of Maize in—		Growing Season.	Farm Value per acre of Maize in—	
	United States of America.	New South Wales.		United States of America.	New South Wales.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
1911	3 1 9	5 7 5	1917	7 10 3	6 0 1
1912	2 18 5	4 19 0	1918	6 16 6	5 1 3
1913	3 6 5	4 17 0	1919	8 0 9	11 0 2
1914	3 9 10	5 6 9	1920	4 7 5	6 15 4
1915	3 7 6	4 13 10	1921	2 11 8	*
1916	4 10 5	4 13 0			

\* Not available.

No comparison is possible between the actual returns obtained in the two countries, since conditions vary so widely between them. It is apparent, however, that the improvement in the gross return per acre has been more marked in the United States in recent years than in New South Wales, and the absence of any substantial improvement locally until 1919 suggests some reason for the decline in maize-growing.

During the ten years ended 1909, the average annual consumption of maize in New South Wales was 4.1 bushels per head of population. Of late years, however, the production of maize has declined, and to maintain the consumption of earlier years an average annual import of about five million bushels would be necessary now. The average annual maize crop during the past five seasons has been 3,631,000 bushels. In 1921, returns of interstate movements of maize were collected. The net import into New South Wales was 886,400 bushels, and it is apparent that a very great decline in consumption has taken place, the average per head of population being less than  $2\frac{1}{2}$  bushels.

### OATS.

The production of oats in New South Wales is not sufficient to supply the local demand, although where cultivation has been undertaken the return has been satisfactory. The elevated districts of Monaro, Argyle, Bathurst, and New England contain large areas of land on which oats could be cultivated with excellent results, as it thrives best in regions which experience a winter of some severity.

The Northern Tableland gave the best average, with 24.6 bushels per acre. In the whole of the Tableland Division 12,801 acres were under crop, and yielded 279,960 bushels, or 21.9 bushels per acre; on the Western Slopes, 28,639 acres gave 555,209 bushels, or 19.4 bushels per acre, while in the Riverina the production was 783,198 bushels from 35,037 acres, or 22.4 bushels per acre. These three Divisions accounted for about 98.5 per cent. of the total production.

The following table gives statistics of the cultivation of oats for grain since 1900-1 :—

Season.	Acres under Oats for Grain.	Production.		Price per Bushel, Sydney Markets.
		Bushels.	Bushels per Acre.	
1900-01	29,383	593,548	20.2	s. d. 2 4
1905-06	38,543	883,081	22.9	2 10
1910-11	77,991	1,702,706	21.8	2 8
1913-14	103,416	1,835,406	17.7	3 0
1914-15	43,476	513,910	11.8	4 7
1915-16	58,636	1,345,698	23.0	2 10½
1916-17	67,111	1,084,980	16.2	3 1
1917-18	82,591	1,455,111	17.6	4 7
1918-19	86,474	1,273,752	14.7	5 9
1919-20	76,117	586,758	7.7	5 7
1920-21	77,709	1,642,700	21.1	4 0½

The cultivation of oats for grain developed rapidly in New South Wales until 1913, but has since declined, and the area and yield have always been of small extent, local needs being supplied largely by importation. Considerable areas, however, are sown with oats for hay and valuable crops produced. (See page 749.)

The local yield per acre is considerably below that of the important producing countries, and the total yield insignificant compared with the world production, which usually amounts to more than 4,000,000,000 bushels per year. Though most countries produce sufficient for their own requirements, considerable international trade is done in oats. The United Kingdom and France are the principal importers and Russia (formerly), but now the United States, Canada, and the Argentine are the principal world suppliers.

The return from the crop to growers in Canada and the United States may be gauged from the fact that, at farm prices, one acre of oats in the former country was, on the average (1915-19), worth £4 17s. 10d., and in the latter (1914-20) £3 16s. 6d., compared with an average of £2 11s. (1910-19) in New South Wales.

Until an accurate soil survey of the State is made it will not be possible to estimate the extent of the possible expansion of oat-growing in New South Wales.

In the period 1900-09 the average consumption of oats was at the rate of 1.4 bushels per head of population. If this relationship still existed local requirements would now be, on the average, about 2 $\frac{3}{4}$  million bushels annually. It is estimated that in 1921 the consumption of oats in New South Wales was 2,535,000 bushels, equivalent to 1.2 bushels per head of population. Of this amount, 892,300 bushels were imported.

At present the market for oats is chiefly in the metropolitan district, and the demand depends mainly on the price of maize. Large quantities are imported from Victoria, Tasmania, and New Zealand.

#### BARLEY.

Barley is produced only on a moderate scale, and local supplies of barley and malt are practically all imported. Although there are several districts where the necessary conditions as to soil and drainage present inducements for cultivation, particularly with regard to the malting varieties, barley is grown mainly in the North-Western Slope and the Riverina Divisions. The areas under crop in other districts are small, and do not call for special notice. The following table shows the area under barley for grain, together with the production at intervals since 1900-01.

Season.	Area under Barley for Grain.	Production.		Season.	Area under Barley for Grain.	Production.	
		Total.	Average per Acre.			Total.	Average per Acre.
	acres.	bushels.	bushels.		acres.	bushels.	bushels.
1900-01	9,435	114,228	12.1	1916-17	5,195	73,370	14.1
1905-06	9,519	111,266	11.7	1917-18	6,370	97,824	15.5
1910-11	7,082	82,005	11.6	1918-19	7,980	86,313	10.8
1914-15	4,861	46,500	9.6	1919-20	5,354	38,892	7.2
1915-16	6,369	114,846	18.0	1920-21	5,969	123,290	20.7

The table shows considerable fluctuation as to the area cultivated, while the grain yield has varied greatly, ranging from 4 bushels per acre in 1902-3, when the crop practically failed, to the excellent rate of 21.9 bushels in 1886-7. The average crop during the last ten years has been about 14 bushels per acre.

## HAY.

The following statement shows the area under each crop for hay, the total production, and the average return per acre during the last seven seasons :—

Type of Hay.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
<i>Area.</i>							
	acres.	acres.	acres.	acres.	acres.	acres.	acres.
Wheaten ...	569,431	879,678	633,605	435,180	613,544	716,770	520,555
Oaten ...	161,320	176,183	161,723	118,917	152,842	172,310	259,991
Barley ...	1,179	1,348	866	844	1,238	1,750	1,836
Lucerne ...	52,582	50,544	61,584	64,708	46,359	46,555	71,038
Rye, etc. ...	1,432	1,166	754	995	977	1,015	843
Total ...	785,944	1,108,919	858,532	620,644	814,960	938,400	854,263

*Production.*

	tons.	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten ...	354,531	1,211,677	813,768	484,708	517,370	354,659	821,745
Oaten ...	147,420	259,476	210,953	150,097	145,638	138,137	399,415
Barley ...	1,112	1,575	1,205	1,083	1,058	1,394	1,890
Lucerne ...	108,934	100,075	147,365	147,172	88,403	85,540	150,426
Rye, etc. ...	1,238	1,135	759	1,146	1,161	856	1,180
Total ...	613,235	1,573,938	1,174,050	784,206	753,630	580,586	1,374,666

*Average Production per Acre.*

	tons.	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten ...	0·62	1·38	1·13	1·11	0·84	0·49	1·58
Oaten ...	0·91	1·47	1·30	1·26	0·95	0·80	1·54
Barley ...	0·94	1·17	1·39	1·28	0·85	0·79	1·03
Lucerne ...	2·07	1·98	2·39	2·27	1·91	1·84	2·12
Rye, etc. ...	0·86	0·96	1·01	1·15	1·19	0·84	1·40

A very considerable portion of the areas under wheat, oats, barley, and lucerne is utilised for the production of hay for farm stock and of cut chaff for the market. This proportion is increasing, but the extent of the increase depends on the climatic conditions of the season.

A scheme of fodder conservation has been propounded; it includes a proposal to store large quantities of hay in the form of chaff for sale to pastoralists in bad seasons, and, if adopted, will provide a considerable stimulus to the growing of crops for hay.

In general, oaten crops are grown in parts of the State which, on account of the climate, are unsuitable for maturing grain, and preference is given to cultivation for hay; moreover, the prices obtainable for the hay are usually so profitable as to prejudice development of the grain harvest.

The area under barley for hay is inconsiderable. Lucerne is always in demand, and consequently realises remunerative prices. It gives the best return of all hay crops, the average yield during the last ten years having been 2·2 tons per acre for lucerne, and a little over a ton each for oaten, barley, and wheaten hay. In favoured districts, and with careful attention, lucerne grows so rapidly that, from a series of crops, as many as eight cuttings may and have been procured, with an average of 1 ton per acre for each.

## GREEN FOOD AND SOWN GRASSES.

The great advance in dairy-farming has caused a corresponding increase during recent years in the cultivation of cereals, lucerne, and grasses, for green food. The cultural development of grasses has received great attention particularly in the northern and southern coastal districts, the great centres of dairy farming in the State. Considerable areas have been sown also in the Central Tableland, and smaller cultivations in the Northern and Southern Tablelands and in the Murray Valley.

The following statement shows the increase in the area cropped for green food and sown with artificial grasses in various seasons since 1900-01 :—

Season.	Area Cropped for Green Food.	Area Sown with Grasses.	Season.	Area Cropped for Green Food.	Area Sown with Grasses.
	acres.	acres.		acres.	acres.
1900-01	78,144	422,741	1916-17	149,873	1,357,157
1905-06	95,058	627,530	1917-18	152,519	1,389,640
1910-11	179,382	1,055,303	1918-19	331,129	1,438,465
1914-15	949,619	1,251,453	1919-20	1,007,506	1,543,317
1915-16	162,945	1,247,099	1920-21	112,043	1,816,175

The area cropped for green food includes the area of crops which failed to mature either for grain or hay, and consequently were fed-off. This area is large in bad seasons and small when conditions are good. In 1919-20 no less than 877,596 acres sown with wheat were fed-off by stock, but in 1920-21 the area so treated was only 15,420 acres.

Lucerne is grown in considerable quantities on the Hunter River flats, and the cultivation of this fodder plant is extending throughout the country, principally along the banks of the rivers flowing from the western watershed of the Dividing Range. During 1920-21 there were 29,570 acres grown for green food, and if to these be added the area cropped for hay, there were altogether 100,608 acres under lucerne.

## ENSILAGE.

New South Wales is liable at intervals of fairly regular recurrence to long periods of dry weather, and, consequently, lacks a permanent supply of natural fodder. Hence the necessity arises for conserving the abundant growth of herbage of good seasons, in the form of ensilage, for use when natural pastures are exhausted. The need is well illustrated by recent experiences. In the latter part of 1919 and the first half of 1920 a severe drought caused heavy losses of sheep and farm stock. Extensive Government aid was given to many distressed farmers, and large sums of money were expended in purchasing fodder from other States at high prices. The breaking of the drought was followed by a prolific growth of grass, of which but a small part could be consumed. If the remainder were scientifically conserved, a vast store of inexpensive fodder would be available for future needs. To facilitate such conservation the Department of Agriculture offers liberal assistance to farmers by erecting for them silos at actual cost, repayable by easy instalments without interest. Farmers may sink pits for the same purpose at small expense. In either case free advice on all matters of material and method is given by the Department.

The possession of stocks of ensilage is highly advantageous to the prosecution of dairy farming in the districts of the coast, where the climatic conditions are unfavourable to the growth of winter fodder.

The quantity of ensilage of which returns have been supplied is shown in the following table:—

Division.	Ensilage Prepared.					
	1900-01.	1905-06.	1910-11.	1915-16.	1919-20.	1920-21.
	tons.	tons.	tons.	tons.	tons.	tons.
Coastal ... ..	1,694	1,414	18,125	7,028	11,012	7,830
Tableland ... ..	3,753	1,430	2,328	800	900	967
Western Slopes ... ..	847	2,250	2,654	5,788	1,012	3,166
Central Plains and Riverina ...	460	4,227	6,409	4,595	284	3,730
Western ... ..	100	...	100	300	120	...
Total ... ..	6,854	9,321	29,616	18,511	13,328	15,633

The quantity of ensilage made each year during the last decade has varied considerably, especially during the first half of the period. The year of maximum production was 1909, when 34,847 tons were made on 364 farms. The production has since decreased considerably. In 1920-21 the production was 15,633 tons, made on 118 farms, and valued at £25,905.

Considering the liability of the State to periods of severe drought, the small efforts made to conserve the fodder of abundant seasons is disappointing.

About the middle of 1921, however, an expert committee sat to consider the matter of fodder conservation as a means of drought insurance. An outline of the scheme proposed is given at the close of Part, "Pastoral Industry," of the Year Book for 1920.

#### POTATOES.

Potatoes are a very important article of food in New South Wales, but producers within the State supply a decreasing proportion—approximately one-half of the quantity consumed here. Considerable quantities are imported from other States, principally Victoria and Tasmania. Prices have of recent years risen to a high level without materially stimulating local production, and the consumption per head has fallen off heavily.

The following statement shows an estimate of the average production, import, and consumption of potatoes in New South Wales for the periods 1901-1909 and 1916-1921. In the latter period the quantity of import is partly estimated:—

Period.	Average Annual Production.	Average Annual Import.	Average Annual Consumption.	
			Total.	Per Capita.
	tons.	tons.	tons.	lb.
1901-09	63,170	50,540	113,710	175·3
1916-20	44,020	63,010	107,030	125·3
1920-21	63,260	34,570	97,830	104·9



It is apparent that the local production of potatoes has diminished seriously, and that sufficient supplies have not been obtained from other States to maintain local consumption at its former level.

The factors governing the local potato supply are shown below in comparison with various years since 1900-01.

Season.	Area under Crop.	Production.		Price per ton, Sydney Markets, Local Potatoes.*
		Total.	Average per Acre.	
	acres.	tons.	tons.	£ s. d.
1900-01	29,408	63,253	2.15	5 1 0
1905-06	26,374	50,386	1.91	7 0 0
1910-11	44,452	121,033	2.72	5 11 0
1915-16	19,589	44,445	2.27	7 18 0
1916-17	22,449	45,331	2.02	5 11 0
1917-18	22,580	49,984	2.21	6 2 0
1918-19	20,879	30,356	1.45	14 8 0
1919-20	20,043	49,986	2.49	12 6 0
1920-21	27,673	63,256	2.29	8 19 0

\* Average for calendar year following growing season.

A very heavy decline in potato-growing is apparent since 1910, when the industry was at its highest point and supplied sufficient for local needs. During the five years prior to 1920-21 production was low, but the area cultivated increased in 1920-21 and production increased considerably under the stimulus of high prices and a favourable season. The average yield during the last ten years has been 2.14 tons per acre, and the highest 2.8 tons per acre in 1909-10. It is noteworthy that in recent years prices and production have been in inverse ratio.

The average wholesale prices per ton of potatoes at Sydney during the season 1919-20 are shown below.

Month.	Local.	Victorian.	Tasmanian.	Month.	Local.	Victorian.	Tasmanian.
1920.	£ s. d.	£ s. d.	£ s. d.	1921.	£ s. d.	£ s. d.	£ s. d.
July ...	15 5 0	13 12 6	15 18 3	January ...	5 7 0	4 17 6	9 9 0
August ...	14 6 6	*	15 3 6	February...	6 9 0	7 15 3	8 16 6
September...	13 5 6	*	15 9 3	March ...	7 1 6	6 0 0	7 15 6
October ...	11 18 6	8 1 3	12 15 6	April ...	6 16 3	*	7 16 3
November...	9 6 6	*	10 16 6	May ...	5 8 3	*	6 13 0
December ...	6 12 3	*	8 10 0	June ...	5 10 0	*	6 12 3

\*No quotations.

In No. 10 Report of the Prices Investigation of the Inter-State Commission of Australia (1919) it was stated that local supplies of potatoes were handled by a combination of merchants, and that prices were needlessly dear in Sydney.

### TOBACCO.

The local consumption of tobacco amounts annually to about six and a half million pounds per annum, manufactured principally from imported leaf, only about 10 per cent. being locally grown.

Tobacco culture is confined practically to the northern and southern portions of the Western Slopes and the Central Tableland.

The following statement shows the extent of the cultivation of tobacco, since 1900-01 :—

Season.	Area.	Production of Dried Leaf.		Season.	Area.	Production of Dried Leaf.	
		Total.	Average per Acre.			Total.	Average per Acre.
	acres.	cwt.	cwt.		acres.	cwt.	cwt.
1900-01	199	1,905	9.6	1916-17	952	921	1.0
1905-06	809	7,327	9.1	1917-18	791	2,609	3.3
1910-11	959	8,513	7.8	1918-19	1,680	20,952	12.5
1913-14	1,992	18,117	9.1	1919-20	1,604	19,236	12.0
1914-15	1,563	10,065	6.4	1920-21	1,021	7,749	7.6
1915-16	1,277	9,563	7.5				

For several years prior to 1889 the area under cultivation grew steadily, and in that year it reached the maximum of 4,833 acres. As, however, the local product did not compare favourably with the American leaf, it could not be treated profitably, and a large proportion of the crop remained upon the farmers' hands, so that many growers abandoned tobacco in favour of other crops. The area had declined to 533 acres in 1907-8, but subsequently it increased, owing to the greater attention paid to the processes of curing. Tobacco manufacturers endeavoured to stimulate the industry by paying adequate prices for good leaf, and by employing expert assistants to instruct growers. In 1916 and 1917 the seasons were unfavourable, owing to the continuous rains in the early spring, which caused an outbreak of blue mould in the seed beds. However, during 1918 and 1919, conditions were most favourable, and both the best and largest crops yet produced in the State resulted. The heavy yield per acre, coupled with the good quality of the leaf and the high prices realised, have encouraged growers to greater efforts, but the season of 1920-21 was adverse.

### SUGAR-CANE.

Sugar-cane was cultivated in New South Wales as early as 1824, but it was not until 1865 that systematic attention was given to this industry. Within a few years the richest portions of the lower valleys of the Clarence, the Richmond, the Tweed, and the Brunswick were occupied by planters. Mills were erected in the chief centres of the industry, and cane-growing and sugar-manufacturing became established industries in the north-eastern portion of the State, where the soil and the climate are in most respects well adapted to successful cultivation.

The following table shows the area and production in various seasons since 1900-01. As sugar-cane is not productive within the season of planting,

the area under cultivation has been divided, as far as practicable, into productive and non-productive, the former representing the number of acres upon which cane was cut during the season, and the latter the area either newly planted or not sufficiently matured for milling, and which was on that account allowed to stand for another year. On the average the area cut for cane represented about one-half of the total area planted.

Season.	Area.			Production of Cane.	
	Cut for Crushing.	Not Cut.	Total.*	Total.	Average per Acre.
	acres.	acres.	acres.	tons.	tons.
1900-01	10,472	11,642	22,114	199,118	19·01
1905-06	10,313	11,492	21,805	201,998	19·59
1910-11	5,596	8,167	13,763	160,311	28·65
1915-16	6,030	5,228	11,258	157,748	26·16
1917-18	5,588	5,008	10,596	174,881	31·30
1918-19	4,566	5,924	10,490	105,234	23·05
1919-20	4,827	5,741	10,568	91,321	18·92
1920-21	5,519	5,863	11,382	131,313	23·79

\* Exclusive of areas cut for green food or plants.

This table bears convincing evidence of the decline in New South Wales of this important branch of agriculture. Though improved methods have resulted during the past eight years in a noticeable increase in the average yield per acre, the total production of cane has fallen far below the level it reached twenty years ago. A persistent and marked decline, both in the total area cultivated and in the area cut for crushing is apparent throughout. The largest area on record, consisting of 32,927 acres, was planted in 1895-6, while the greatest production, 320,276 tons of cane, was obtained in 1896-7, but the average yield in that year was only 17·6 tons per acre. At about this time alterations were made in the Customs Tariff with regard to sugar, and a great development in dairy farming on the Northern Rivers commenced. Both causes operated to prevent the progress of sugar-growing. In recent years another industry, that of banana-growing, has entered the field in competition with sugar-growing, and the higher returns in this new activity have added further serious cause to the decline in the area devoted to sugar. In 1918-19 and 1919-20 the area cultivated was smaller than in any preceding year since 1880, and the total yield the lowest on record.

The majority of the farmers combine the growing of sugar-cane with dairy-farming, and only a few estates are devoted entirely to its production.

It became necessary in March, 1920, for the Commonwealth Government to grant a substantial advance in the price of sugar. This was done with the two-fold object, firstly, of stimulating local production and, secondly, of meeting the cost of imported supplies.

#### VINEYARDS.

The principal vineyards of the State are situated in the valleys of the Murray and the Hunter Rivers, where capital has been expended generously to introduce skilled labour, and to provide manufacturing appliances.

The great irrigated areas in the Murrumbidgee Valley are now rapidly growing in the favour of vignerons, and they may within a few years become the most important wine-producing districts of the State. Several hundred acres have already been planted with vines, and the results of the culture have proved highly satisfactory.

The vine-growing and wine-manufacturing industries are still, however, in their infancy, and at present the production is, speaking comparatively, insignificant, although oversea markets exist for wine and certain classes of dried fruits.

The following table shows, at intervals since 1900-1, the total area under vines in this State, the area devoted to the wine-making industry only, the total production of wine in gallons, and the average number of gallons to the acre:—

Season.	Total Area under Vines.	Area under Vines for Wine-making only.	Production of Wine.		Season.	Total Area under Vines.	Area under Vines for Wine-making only.	Production of Wine.	
			Total.	Average per Acre.				Total.	Average per Acre.
	acres.	acres.	galls.	galls.		acres.	acres.	galls.	galls.
1900-01	8,441	4,534	891,190	197	1917-18	8,594	3,839	538,210	140
1905-06	8,754	5,279	831,700	157	1918-19	8,740	3,961	555,770	140
1910-11	8,321	4,354	805,600	185	1919-20	8,923	4,233	717,893	170
1915-16	7,883	3,501	571,000	163	1920-21	10,783	4,589	674,188	147

The wine produced in New South Wales during the year 1920-21 was valued at £123,580, and the brandy distilled by vigneronns for fortifying purposes at £3,840.

The culture of grapes is not restricted to the production of fruit for wine manufacture, but only a small area is devoted to their production for table use, mainly in certain parts of Central Cumberland, and in the Orange, Yanco, and Mirrool districts. The extent of land devoted to this branch of the industry in 1920-21 included 2,087 acres, with the production of 2,660 tons of grapes.

Although there is a large local demand, and possibility of an export trade for raisin fruits, no extensive areas have as yet been planted. In 1920-21 there were 699 acres cultivated for drying purposes, and the yield was 6,917 cwt., comprising 3,396 cwt. of sultanas, 1,052 cwt. of raisins, and 2,469 cwt. of currants. At the vineyards conducted in connection with the Wagga Experiment Farm and the Hawkesbury Agricultural College raisins and sultanas are dried every season and placed on the local market, where they are regarded as equal in every respect to the imported article.

#### ORCHARDS.

The cultivation of fruit is capable of considerable expansion, as both the soil and the climate of large areas throughout the State are well adapted to fruit-growing. A larger area of land is, however, being brought each year under fruit culture, and orchardists may obtain from the Department of Agriculture information as to the varieties which are recommended for planting in specified districts, and the prospects of ultimate success are thus greatly enhanced. With large areas of suitable soil and with climatic conditions ranging from comparative cold on the highlands to semi-tropical heat on the North Coast, a large variety of fruits can be cultivated. In the vicinity of Sydney, oranges, peaches, plums, and passion-fruit are most generally planted. On the Tableland, apples, pears, apricots, and all the fruits from cool and temperate climates thrive well; in the west and in the south-west, figs, almonds, and raisin-grapes can be cultivated; and in the north coastal districts, bananas, pine-apples, and other tropical fruits grow excellently.

Citrus fruits are cultivated extensively, and form the largest element in local production.

Particulars of citrus orchards are shown in the following statement:—

Season.	Area under Cultivation.			Production.	
	Productive.	Not Bearing.	Total.	Total.	Average per Acre.
	acres.	acres.	acres.	bushels.	bushels.
1900-01	11,013	3,952	14,965	648,628	59
1905-06	15,054	2,795	17,849	886,493	59
1910-11	17,465	2,643	20,108	1,478,306	85
1915-16	17,542	5,717	23,259	1,360,898	78
1917-18	19,133	6,311	25,444	1,737,107	91
1918-19	20,529	7,068	27,597	1,619,346	79
1919-20	21,523	7,204	28,727	1,769,038	82
1920-21	21,990	6,445	28,435	2,009,756	91

The number of orchards in which citrus fruit was cultivated during the year 1920-21 was 6,071, and of these the average area was 4·7 acres.

The production of oranges and mandarins has attained such proportions that the growers are obliged to seek oversea markets, the supply, both in New South Wales and in the adjacent States, exceeding in some seasons the local demand. During 1920-21 the export of citrus fruits from New South Wales amounted to 42,762 centials, valued at £60,835, practically all of which went to New Zealand.

The principal crops of fruit other than citrus products, which are more intensively cultivated in the neighbourhood of Sydney, range from natives of comparatively cold to those of temperate and semi-tropical climes, but their successful culture is determined by altitude as well as by parallels of latitude.

The following table shows the area under orchards and fruit-gardens exclusive of citrus orchards, together with the total value of each season's yield, at intervals since 1900-01:—

Season.	Area of Productive Fruit-gardens and Orchards.	Area of Fruit-Gardens and Orchards not Bearing.	Total Area Cultivated for Fruit-gardens and Orchards.	Total Value of the Production of Fruit-gardens and Orchards.	Approximate Average Value per Acre.
	acres.	acres.	acres.	£	£ s. d.
1900-01	25,766	5,503	31,269	270,081	10 10 0
1905-06	25,189	3,577	28,766	189,195	7 10 0
1910-11	20,498	6,748	27,246	271,930	13 5 4
1915-16	19,006	13,173	32,179	243,210	12 16 0
1917-18	22,121	13,784	35,905	376,090	17 0 0
1918-19	23,795	12,970	36,765	742,730	31 4 0
1919-20	25,688	13,978	39,666	737,328	28 14 0
1920-21	27,368	14,309	41,677	796,260	29 1 11

Owing to the subdivision of orchards for residential and other purposes the area under fruit declined from 32,346 acres in 1901-02 to 25,859 acres in 1909-10; since that season it has increased, and in 1920-21 was the highest on record.

More than one-third of the area devoted to fruit culture is in the county of Cumberland, the actual areas in 1920-21 being citrus, 10,467 acres; fruits other than citrus, 7,505 acres. At the Murrumbidgee irrigation settlement fruit-trees are being planted very extensively, especially peaches, apricots, and oranges.

With the exception of oranges and mandarins, the fruit-production of New South Wales is far below average demands. The State is, therefore, obliged to import large quantities, the greater portion of which could be grown within its own boundaries. As a matter of fact, considerable quantities of fruit produced in New South Wales never reach the consumer. This is due to faults of marketing, and to lack of co-operation among growers. Good seasons are rewarded by a glut of fruit, for which, apparently, there is no system of efficient handling; and while consumers are anxious to secure supplies of sound fruit, much of the produce is allowed to be wasted. The condition of the industry was investigated by the Select Committee on Agriculture in 1921, and much valuable information is contained in the report of that committee and the evidence taken by it.

The extent of cultivation of each kind of fruit is shown in the following table for the past two seasons :—

Fruit.	1919-20.			1920-21.		
	Number of Trees not yet Bearing.	Trees of Bearing Age.		Number of Trees not yet Bearing.	Trees of Bearing Age.	
		Number.	Yield.		Number.	Yield.
Oranges—			bushels.			bushels.
Seville ... ..	29,790	94,714	98,767	35,202	83,784	84,379
Washington Navel ...	137,993	234,829	202,896	139,381	258,703	261,916
Valencia ... ..	186,233	273,794	242,854	154,774	344,665	321,156
All other ... ..	95,120	582,060	503,371	106,073	564,588	574,832
Lemons ... ..	88,079	257,035	270,876	86,268	241,325	279,023
Mandarins ... ..	96,451	466,403	446,303	74,289	462,762	474,283
Other Citrus ... ..	2,676	3,729	4,071	2,333	11,702	14,167
Apples ... ..	369,737	718,350	524,303	394,208	749,569	891,345
Pears—						
Williams ... ..	108,254	147,216	120,281	106,361	161,511	169,663
All other ... ..	47,654	49,727	45,360	50,175	64,709	65,008
Peaches—						
Early ... ..	146,833	494,472	507,958	121,925	477,110	476,446
Canning ... ..	80,304	196,145	217,338	93,415	216,434	299,336
Nectarines ... ..	9,943	34,892	29,218	12,013	34,230	34,097
Plums ... ..	99,083	132,385	120,770	98,742	150,796	167,807
Prunes ... ..	174,058	32,857	19,651	216,215	50,165	43,464
Cherries ... ..	101,775	139,212	51,613	92,362	145,334	65,145
Apricots ... ..	34,194	109,088	105,839	53,068	108,776	118,745
Quinces ... ..	12,983	25,031	28,820	10,817	23,531	32,482
Persimmons ... ..	5,196	10,677	11,878	3,583	11,640	13,150
Passion Fruit ... ..	*32,641	*95,957	58,901	*34,624	*80,231	34,819
All other ... ..	19,092	28,315	14,885	18,545	31,538	15,205

\* Vines.

The above figures include returns from private orchards, which are, however, of comparatively small amount, ranging from 2 per cent. of the total orchards, in the case of citrus fruits, up to about 8 per cent. in the case of some stone-fruits.

Banana culture is becoming an important industry in the Tweed River district of the North Coast division. In 1920-21 the total area was 5,750 acres; 3,917 acres were productive and yielded 335,328 cases of bananas, valued at £215,780.

## WATER CONSERVATION AND IRRIGATION.

THE provision of an adequate water supply for irrigation purposes is essential in a country liable to dry seasons which affect extensive areas, and a recognition of this fact has induced the Government to undertake various schemes, which will constitute portion of an irrigation system to serve the whole State.

The following table shows in conjunction with the total area, the area under crop, the number of sheep and cattle, and the average annual rainfall in the various divisions calculated over a period of years; the rainfall figures indicate the range of the averages of the representative stations in each division :—

Division.	Average Annual Rainfall.	Total Area.	Area Under Cultivation 1920-21.		Sheep, 1921.	Cattle, 1921.
			Wheat For Grain.	Other Crops.		
<b>Coastal—</b>	Inches.	Acres.	Acres.	Acres.	No.	No.
North Coast ...	38—63	5,410,000	...	87,000	5,000	768,000
Hunter & Manning ...	24—60	10,391,000	3,000	95,000	750,000	622,000
Cumberland ...	31—48	1,070,000	...	35,000	13,000	55,000
South Coast ...	27—56	5,484,000	...	44,000	172,000	238,000
Total ...	...	22,355,000	3,000	261,000	940,000	1,683,000
<b>Tableland—</b>						
Northern ...	30—32	8,928,000	13,000	68,000	1,936,000	389,000
Central ...	24—37	8,989,000	111,000	157,000	2,168,000	119,000
Southern ...	19—32	7,914,000	11,000	48,000	2,643,000	144,000
Total ...	...	25,831,000	135,000	273,000	6,747,000	652,000
<b>Western Slopes—</b>						
North ...	24—31	9,813,000	306,000	69,000	3,359,000	258,000
Central ...	20—29	6,253,000	580,000	139,000	1,989,000	75,000
South ...	20—28	8,186,000	501,000	197,000	3,389,000	167,000
Total ...	...	24,252,000	1,387,000	405,000	8,737,000	500,000
<b>Plains and Riverina—</b>						
North Plains ...	19—23	10,031,000	20,000	7,000	2,884,000	114,000
Central Plains ...	17	16,030,000	422,000	71,000	4,246,000	110,000
Riverina ...	14—17	19,767,000	1,159,000	318,000	5,756,000	182,000
Total ...	...	45,828,000	1,601,000	396,000	12,886,000	406,000
<b>Western Plains</b> ...	9—16	80,368,000	1,000	5,000	4,542,000	134,000
<b>Whole State</b> ...	...	198,634,000	3,127,000	1,340,000	33,852,000	3,375,000

The table shows that the extent of country with a low average rainfall is considerable, no less than 116,165,000 acres, 58·5 per cent. of the total area of the State, receiving average annual rains less than 18 inches. In these districts large numbers of sheep are depastured, and practically one-half of the crops are grown; therefore, there is urgent necessity for the conservation of available water to carry the stock over periods of drought, and to increase

the cultivation of fodder and other crops which can be grown under irrigation. Even in the coastal districts, where the average rainfall is highest, the dairying industry suffers from periods of dry weather, of which the effects could be mitigated if sufficient attention were paid to conservation.

#### THE CONTROL OF WATER CONSERVATION AND IRRIGATION WORKS.

The system and the works necessary for its maintenance and development, are under the control of the Water Conservation and Irrigation Commission, which consists of the Minister for Agriculture, as Chairman, and two other Commissioners. The works controlled by the Commission include the great Murrumbidgee irrigation scheme, the small irrigation settlements at Hay and Wentworth, national works of water conservation, artesian and shallow boring for settlers, and water trusts and artesian bore trusts operating under the Water Act. The Commission has control also of storages and diversions of water by private persons for purposes of conservation and irrigation, and investigates and attends to administrative matters connected with proposed irrigation schemes.

#### THE MURRUMBIDGEE IRRIGATION SCHEME.

Under this scheme a storage dam has been constructed at the head of the Murrumbidgee River, to retain the flood waters, which are released for use lower down the river on the extensive irrigation areas of Yanco and Mirrool. Provision has been made for a movable diversion weir about 240 miles below the dam, to turn the required amount of water from the river into the main canal; a main canal, leaving the river near the weir; four main branch canals and a series of subsidiary canals and distributing channels through the area irrigated; bridges, checks, regulators, and other structures throughout the entire system; and meters for measuring the volume allowed to each farm. Towns and villages, roadways to serve each farm, and a general surface drainage system are included in this scheme.

The site of the storage dam is at Burrinjuck, 3 miles below the confluence of the Murrumbidgee and the Goodradigbee Rivers, where the river is confined between two mountains of red granite, which rise 2,000 feet above the river bed. The dam-wall, which is practically complete, will have a maximum height of 240 feet, with a base 160-feet thick, tapering to 18 feet in width at the top, and will impound the waters in a lake covering 12,740 acres. The reservoir will have a capacity of nearly 33,612 million cubic feet or 771,640 acre-feet. The catchment area includes elevations of 5,000 feet, which are snow-covered in winter. It contains about 5,000 square miles, drained by three principal streams—the Murrumbidgee, the Goodradigbee, and the Yass Rivers—up which the water will be backed, when the dam is full, to distances of 41 miles, 15 miles, and 25 miles respectively above the dam. The depth of water at the dam, when filled to full supply level, will be 200 feet, and 2 miles above the dam the submerged flats will be covered by 150 feet of water over an area of 5 square miles.

Direct communication between Burrinjuck and the Main Southern Railway has been provided by the construction of a 2-foot gauge line from Goondah, a distance of 26 miles. The irrigation areas are situated on the northern side of the Murrumbidgee River, about 250 miles from the dam. At 30th April, 1922, there were under occupation for irrigation 1,637 farms, covering a total area of 94,763 acres, or a little more than one-fourth of the total area to be embraced in the completed scheme. With the aid of irrigation the soil and climate are suitable for the profitable production of apricots, peaches, nectarines, prunes, pears, plums, certain varieties of



apples, almonds, melons, cantaloupes, and citrus fruits; also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables and fodder crops. Dairying and pig-raising are being conducted successfully by settlers in the areas, and stock are raised in the drier parts.

Farms varying in size from 1 acre to 250 acres are made available from time to time. The average agricultural farm is from 15 to 25 acres in extent, but to suit the requirements of dairymen and other stock farmers, blocks of larger areas have been made available. These include non-irrigable or "dry" areas, in addition to the irrigable portion. The "water right" or number of "acre-feet" of water allotted to each holding is specified when the holding is notified as available for application, as is also the charge for such fixed water rights which may be altered at any time by notification in the *Government Gazette*. An "acre-foot" of water means such a quantity as would cover 1 acre with water 12 inches deep.

The conditions for the disposal of irrigation blocks are contained in the Crown Lands Consolidation Act of 1913 and its amending Acts. Any person over the age of 16 years if male, or 18 years if female (other than a married woman not living apart from her husband under decree of judicial separation), or two or more such persons jointly, not subject to any statutory disqualification, may apply for a farm or block. A married woman may hold a farm in certain circumstances. The tenure of these farms is perpetual leasehold, and a transferable perpetual lease grant is issued to the farmer after five years of occupation, but residence on the block is a condition of such grant. The rentals are fixed for the first twenty-five years by notification in the *Government Gazette*, and are thereafter subject to reappraisement.

Improvement conditions are attached to the farm holdings. These include erection of fencing, planting of trees for wind-breaks, construction of dwellings, and the destruction of noxious plants. But the value of such improvements are secured to the settler should he sell or surrender his farm.

Subject to such conditions as to security and terms of repayment as the Commission may require, settlers may obtain an advance, or have suspended the payment of amounts owing. Such advances are limited to the total amount of funds made available by Parliament for this purpose. At 30th June, 1921, the amount of such advances outstanding was £699,525. The Rural Bank Commissioners also have statutory powers to make loans upon mortgage of irrigation farm leases.

Large areas of land have been reserved for discharged soldiers; and camps have been established for the accommodation of selected applicants, who are granted farms after three months' satisfactory service. While in camp the men are employed upon developmental work in connection with their blocks, and are paid wages at award rates.

Upon taking up residence on their farms these settlers may obtain advances up to £625 for the development of their blocks, and subsequently such additional amounts as may be necessary to bring their land to the stage of productiveness. Payment for rent, &c., and repayments of advances will be suspended for five years in the case of fruit farms, and for two years in the case of dairy farms. The total indebtedness, including interest, will then be payable by instalments extending over a period of twenty years.

Towns and villages have been established at convenient centres on the Yanco and Mirrool irrigation areas. At present the Commission performs municipal functions, constructing streets and providing water-supply, sanitary, and other services; but a project to establish Local Government areas in the form of shires is receiving consideration.

Factories for making butter, cheese, bacon, and for canning fruit and vegetables have been established on the areas by the Commission to treat the produce of the settlers. In addition to these industrial ventures, the Commission has undertaken to provide such municipal services as domestic water and electricity supplies, abattoirs, accommodation houses, and to supervise matters of health and sanitation, besides engaging in trading operations to supply settlers with live-stock, stores, and nursery stock. Co-operative enterprise, however, is receiving every encouragement, and a number of co-operative organisations have been established to handle produce and supply the settlers' requirements.

The State nurseries at Leeton and Griffith supply fruit and other trees to the settlers, and an experiment farm is maintained at Yanco under the control of the Department of Agriculture; also a viticultural nursery at Griffith (in the Mirrool irrigation area) for the propagation of vines on phylloxera-resistant stocks. It is proposed to establish an Agricultural High School at North Yanco.

During the season 1919-20 the total area of crops irrigated was 34,528 acres, and the average amount of water used per acre 8 acre feet. Details of production will be found in a statement on page 762.

#### HAY IRRIGATION AREA.

The irrigation area at Hay, on the Murrumbidgee River, consists of about 4,500 acres; prior to 1913 it was controlled by a trust appointed in 1897. On 30th June, 1921, the area held and used for irrigation purposes was 1,039 acres in 109 blocks, ranging from 3 acres to 34 acres in size; generally the term of lease is thirty years, and the annual rental from 5s. to 12s. per acre. In addition, 2,698 acres of non-irrigated land had been taken up in 48 blocks, as permissive occupancies. The water-rate is fixed from time to time; during 1920-21 it was 30s. per acre per annum. The pumping machinery consists of a suction-gas plant, supplying two engines of about 55-brake horse-power each, working two centrifugal pumps, with an average combined capacity of about 4,000 gallons per minute. Dairying and pig-raising are the principal industries, the cultivation of fruit being very limited.

#### CURLWAA IRRIGATION AREA.

The Curlwaa irrigation area, situated at Wentworth, consists of 10,600 acres, of which 1,426 acres were held in irrigated holdings. On 30th June, 1921, practically the whole of this area had been taken up in areas varying from  $1\frac{1}{2}$  acres to 37 acres. There are also 76 non-irrigated blocks, containing 6,967 acres, and the remainder of the area was common land. During the year 1920-21 the area under fruit was 872 acres, of which 666 acres were bearing. Oranges, peaches, apricots, nectarines, pears, grapes, sultanas, and currants are grown, and it has been proved that the Curlwaa soil is eminently suited to fruit culture, some of the finest oranges grown in New South Wales being the product of this locality. Surveys have been completed covering 966 acres, which it is proposed to add to the area, and 450 acres have been made available for application.

The pumping plant consists of a suction-gas engine of 120 horse-power, driving an 18-inch centrifugal pump, having a maximum capacity of 8,000 gallons per minute. The main channels measure about 9 miles and 10 chains in length.

The land is leased for periods not exceeding thirty years, the annual rent at the present time varying generally from 1s. to 10s. per acre, though the rent is as much as 24s. per acre on blocks set apart in recent years. The rate for water is fixed from time to time by the Commission and is at the

present 20s. per acre per annum, except in a few special cases, and there is in addition a general rate of 10s. per acre in productive bearing. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum, limited to 4 inches in any one month.

The rainfall for the year ended 30th June, 1921, was above the average, being 18.82 inches, and the quantity of water pumped from the Murray River was 3,394 acre-feet.

#### PROGRESS OF IRRIGATION SETTLEMENTS.

Comparative statistics of the irrigation settlements in New South Wales are shown in the following statement; the particulars for 1910-11 relate to the Hay and Curlwaa settlements only, as farming on the Murrumbidgee area was not in operation until the season 1912-13:—

Particulars.	1910-11.	1915-16.	1920-21.			
			Murrumbidgee.	Hay.	Curlwaa.	Total.
Cultivated Holdings ... .. No.	86	771	1,053	26	108	1,190
Area under—						
Crop ... .. "	862	22,488	29,511	232	1,322	31,065
Grain ... .. "	2	4,287	2,856	...	4	2,860
Hay and Green Food ... .. "	399	13,631	15,807	194	84	16,085
Grape Vines—						
Bearing ... .. "	186	353	935	1	317	1,253
Not yet Bearing ... .. "	74	486	1,644	...	252	1,896
Orchards—						
Bearing ... .. "	58	440	3,689	37	428	4,154
Not yet Bearing ... .. "	139	2,896	4,180	...	234	4,414
Live Stock—						
Horses ... .. No.	239	3,300	4,719	307	238	5,264
Cattle—						
Dairy ... .. "	484	2,461	3,463	475	69	4,007
Other ... .. "	530	1,488	4,792	624	47	5,463
Sheep ... .. "	703	32,440	11,392	5,431	104	16,927
Swine ... .. "	134	2,799	2,465	91	8	2,564
Production—						
Wine ... .. gal.	...	650	*64,000	...	...	*64,000
Sultanas ... .. cwt.	1,009	{	2,778	397	...	2,526
Raisins ... .. "			1,499	140	5	822
Currants ... .. "			1,845	298	...	1,890
Oranges—						
Seville ... .. bush.	273	4,988	{	326	191	...
Washington Navel ... .. "				34,483	44	14,801
Valencia ... .. "				18,623	...	2,700
All other ... .. "				2,563	40	335
Peaches—						
Early ... .. "	2,467	25,861	{	35,825	1,250	3,358
Canning ... .. "				163,937	10	8,414
Nectarines ... .. "				2,721	19	1,011
Apricots ... .. "	2,905	10,690	51,391	662	6,083	58,136
Milk ... .. gal.	171,619	504,181	1,687,474	122,272	7,040	1,816,786
Butter (on farm) ... .. lb.	5,100	12,923	38,851	1,910	...	40,761
Bacon and Ham (on farm) ... .. "	820	8,865	10,933	480	...	11,413

\* Includes 40,000 gallons made from purchased grapes.

The area devoted to fruit-growing has increased considerably since 1915-16, but the orchards planted on more than half of the area have not yet reached the stage of production. Oranges, peaches, nectarines, and apricots are the principal kinds of fruit produced, but the yield is small in comparison with that which may be expected in a few years as the young trees become increasingly productive.

The following statement shows the number of fruit-trees of the principal varieties, distinguishing the productive from those not yet bearing:—

Fruit-trees.	1910-11.		1915-16.		1920-21.	
	Pro- ductive.	Not yet Bearing.	Pro- ductive.	Not yet Bearing.	Pro- ductive.	Not yet Bearing.
Orange—						
Seville ... ..	202	3,606	6,509	67,020	1,150	6,283
Washington Navel ... ..					60,810	70,314
Valencia ... ..					27,425	40,028
All other ... ..	119	136	439	9,388	3,134	5,443
Peach—						
Early ... ..	1,752	4,503	16,812	101,113	31,022	29,664
Canning ... ..					118,811	73,804
Nectarine ... ..					3,739	4,020
Apricot ... ..	2,033	2,969	5,927	42,066	51,624	37,901
Prune ... ..	...	...	...	10,290	14,832	62,353
Plum ... ..	98	282	682	5,897	8,475	6,812
Pear—						
Williams ... ..	165	1,096	2,278	14,336	10,908	15,596
Other ... ..					5,663	3,457
Apple ... ..	400	718	1,256	3,065	3,452	10,240
Fig ... ..	201	38	303	3,395	1,428	2,995
Almond ... ..	...	140	582	5,446	6,948	8,631

It is noteworthy that while the growing of oranges has developed rapidly the development of peach growing, especially for canning, has been more rapid, and that apricots, prunes, pears, and apples are also receiving considerable attention.

#### WATER RIGHTS.

The Water Act, 1912, consolidates the Acts relating to water rights, water and drainage, drainage promotion, and artesian wells. Part II of the Act vests in the Crown the right to the use, flow, and control of the water in all rivers and lakes which flow through or past or are situated within the land of two or more occupiers. Private rights were abolished, and a system of licenses was established for the protection of private works, of water conservation, irrigation, and drainage, and the prevention of inundation of land. During the year ended 30th June, 1921, 198 applications were received for new licenses, and 229 for the renewal of existing licenses; at the date mentioned 1,481 licenses were in force.

#### Water Trusts and Bore Trusts.

Part III of the Water Act, 1912, provides for the supply of water for irrigation, stock, or domestic purposes, and for drainage, the liabilities on which are repaid to the Crown, with interest spread over a period of years; the works are administered by trustees appointed from among the beneficiaries under the Act, except in the case of trusts in the Western Division, when the Western Land Board is appointed as trustee.

For the supply of water, trusts have been constituted in connection with (a) seventy-eight artesian wells; (b) nine schemes for the improvement of natural off-takes of effluent channels, for the purpose of diverting supplies from the main rivers; (c) in three instances for the construction of weirs across stream channels; and (d) two pumping schemes—one from a natural watercourse, and one from a well.

The area included within these trusts amounts to nearly 7 million acres.

#### *Artesian Bores.*

That portion of the great Australian artesian basin which extends into New South Wales covers approximately 70,000 square miles, and is situated in the north-western portion of the State.

The first artesian bore was sunk in 1879 on the Kallara pastoral holding, between Bourke and Wilcannia, and the first Government bore was completed in 1884 at Goonery on the Bourke-Wanaaring road.

The following statement shows the extent of the work which has been successfully effected by the Government, and by private owners, up to the 30th June, 1921 :—

Bores.	Flowing.	Pumping.	Total.	Total Depth.
				feet.
For Public Watering-places, Artesian Wells, etc.	123	37	160	330,595
For Country Towns Water Supply ... ..	2	1	3	4,354
For Improvement Leases ... ..	34	3	37	58,412
Total, Government Bores ..	159	41	200	393,361
Private Bores... ..	222	82	304	444,141

The average depth of Government bores is 1,967 feet, and of private bores 1,461 feet, and they range from 89 to 4,338 feet.

The deepest wells in New South Wales are in the county of Stapylton, one at Boronga having a depth of 4,338 feet and an outflow at present of 924,990 gallons; another at Dolgelly has a depth of 4,086 feet, and a discharge of 534,406 gallons per day. The largest outflow at the present time is at the Witrah bore, in the county of Benarba, which yields 1,079,776 gallons a day, and has a depth of 3,578 feet.

Of the 552 bores which have been sunk, 381 are flowing, and give an aggregate discharge of 85,209,550 gallons per day; 123 bores give a pumping supply, the balance of 48 being failures.

The flow from 78 bores is utilised for supplying water for stock on holdings served in connection with bore-water trusts or artesian districts under the Water Act of 1912. The total flow from these bores amounts to 34,543,740 gallons per day, watering an area of 4,556,024 acres by means of 2,820 miles of distributing channels. The average rating by the bore trusts to repay the capital cost, with 4 per cent. interest, in twenty-eight years, is 1.5d. per acre, including the cost of maintenance and administration.

In the majority of cases the remaining bores are used by pastoralists for stock-watering purposes only, but in a few instances the supply is utilised in connection with country towns.

The watering of the north-western country by means of bore-water has largely increased the carrying capacity of the land; but, what is perhaps of greater importance, it has made practicable some pastoral settlement on small holdings in country previously utilised almost entirely by companies holding immense areas.

It has been determined that the multiplicity of bores is the chief factor governing the annual decrease in bore-flows, also that the limitation of the discharge of water from a bore will prolong its existence as an efficient flow; action has been taken, therefore, to prevent any waste by the control of the bore-flow, and by its adjustment to actual needs. It is anticipated that this action will materially reduce the rate of decrease in the future.

### *Shallow Boring.*

Arrangements were made by the Government in 1912 to assist settlers by sinking shallow bores, and the scheme, which was described fully in the 1916 issue of this Year Book, has met with considerable success. Operations were commenced with one plant only, but the number has been increased gradually and 28 are now at work.

Up to the 30th June, 1921, 748 bores had been undertaken, but 133 proved failures, the total cost being £131,390. The total depth bored to the 30th June was 211,844 feet, the greatest depth of any bore being 1,000 feet. During the year £49,010 was expended on boring operations.

In addition to the work conducted under the shallow-boring regulations, 22 bores have been sunk in the Pilliga Scrub and on Crown lands for the Lands Department and Forestry Commission. The fact that 52 of the bores put down in the Pilliga Scrub are giving a flowing supply is of special interest, as it indicates the possibility of tapping a small and hitherto unknown artesian basin.

### *Private Artesian Bores.*

Much has been done in the way of artesian boring by private enterprise. So far as can be ascertained, 328 private bores have been undertaken in New South Wales, of which 24 were failures. The yield of the flowing bores is estimated at 38 million gallons per day. No data are available regarding the pumping bores.

### RIVER MURRAY IRRIGATION SCHEME.

Prior to 1914 the growth of irrigation settlement placed a heavy drain upon the fluctuating resources of the River Murray, and the danger of exceeding the capacity of its flow in dry seasons led the State of Victoria to consider means of water conservation, in order to supply the growing needs of settlers. Since the River Murray, as far west as the 141st meridian of longitude, is included within the boundaries of New South Wales, an interstate agreement became necessary. The State of South Australia, through which the lower reaches of the river flow, and the Commonwealth Government joined in the discussions, and an agreement between representatives of the four Governments, signed on 9th September, 1914, was subsequently ratified by the various Parliaments, and an amending agreement was signed on 23rd November, 1920.

The outstanding matters provided by the original and amending agreements were:—(a) Provision of water for irrigation purposes; (b) preservation of facilities for navigation; (c) allotment of equitable proportions of the available water for use by settlers in New South Wales, Victoria, and South Australia; (d) equal apportionment of the costs between the four Governments ratifying the agreement; (e) the appointment of a joint commission to carry the agreement into effect.

The scheme provided for the construction of (a) a dam and storage reservoir to be known as Hume Reservoir, with a capacity of one million acre-feet of water, at a cost of £1,353,000, situated on the Murray River 10 miles above the town of Albury; from this reservoir waters are to be released to supply

the needs of irrigation settlements in New South Wales and Victoria, and to provide sufficient waters for permanent navigation on the river; (b) for storage works in connection with Lake Victoria near the western boundary of New South Wales, with a capacity of 500,000 acre-feet, at a cost of £205,000—the waters so impounded are to be utilised for irrigation purposes in South Australia and to maintain the flow of the river for navigation purposes; (c) thirty-five weirs and locks, at intervals along the river and its tributaries, to control the flow of the river. The total cost of all joint works agreed upon was estimated to be approximately £4,663,000.

When the scheme is carried out the river will be “canalised,” or converted into “a succession of pools,” whose levels may be regulated so that they will furnish permanent supplies for irrigation, as well as a means of navigation on the most important waterway of Australia. A minimum depth of 5 feet of water will be maintained as far as Echuca, the present head of navigation. The allotment of the available water to the respective states was approximately two-fifths of the total each to New South Wales and Victoria, and one-fifth to South Australia.

The total area of land irrigable from the River Murray and its tributaries is estimated to be approximately 1,500,000 acres, and, an investigation, is in progress to determine how the irrigable lands of New South Wales may be used most profitably.

The agreement was brought into operation on 31st January, 1917, and it was provided that the works be completed within twelve years of that date. Though minor operations on locks and weirs had been carried out in South Australia, construction of the main reservoir was not begun until the 28th November, 1919. It was stated in the report of the River Murray Commission (1920–21) that the work cannot be completed within the prescribed time.

Considerable progress was made in the work of constructing the dam during 1920–21, and the total expenditure by all governments in connection with the scheme during that year was £277,970; the total expenditure to 30th June, 1921, was £714,883, of which amounts £108,429 and £166,485 respectively were contributed by New South Wales.

## PASTORAL INDUSTRY.

IN New South Wales the pastoral industry is confined principally to sheep-raising and wool-growing, though, of late years, cattle-raising has increased in importance. It has always been by far the greatest source of wealth-production among primary industries; but, within the past twenty years, agriculture and dairying have developed rapidly, and the pastoral industry has assumed a place second to the manufacturing industry, as measured by the value of production.

It is to the rise of the pastoral industry that the State owes the continuance of the long period of rapid expansion which began with the gold-rushes of the fifties and ended in 1893. When the excitement of fortune-hunting had subsided, it was natural that, in response to the ever-increasing world demand for wool, attention should be diverted to pastoral pursuits. Extensive pastures and excellent breeds of sheep suited to local conditions existed, and all factors favoured the rapid development of industries connected with sheep, and their expansion brought enormous benefits to the trade and industry of the State. In the twenty years which followed 1871 the value of pastoral production almost doubled, and many subsidiary manufactures were established. Year by year, until 1891, nearly one-half of the total value of production from all sources was derived from the pastoral industry; while the wool trade alone practically built up the export trade, as will be seen from the following simple comparison:—

Period.	Average Annual Value of N.S.W. Produce Exported.		
	Wool.	All Commodities.	Proportion of Wool.
	£	£	per cent.
1860-69	2,100,000	6,491,000	32.2
1870-79	4,847,000	9,114,900	53.2
1880-89	8,407,000	13,861,000	60.7
1890-99	9,303,000	16,611,000	56.0

It will be observed that wool assumed a constantly-increasing importance in the export trade of the State, and that the expansion up to 1890 was almost entirely due to the increasing value of wool sent oversea.

The development of the wool industry up to 1890 had proceeded very rapidly, for although prices had declined steadily after 1870, supply had not greatly exceeded demand in European markets, and the manufacture of textile fabrics was extending. But a severe check was sustained in 1890, when the Baring crisis produced stagnation in business enterprise in England, and prices declined heavily in consequence. In the next year the number of sheep in the State reached its maximum, and the quantity of wool produced was greater than in any other year, except 1910. Bad seasons characterised the nineties, as well as stagnant markets. The



number of sheep depastured in the State was probably in excess of its carrying capacity, and heavy losses resulted from successive droughts until 1902. Thereafter a steady revival commenced, and the industry improved until 1910, when a decline in production and in the number of sheep depastured commenced, and proceeded with some fluctuations until 1920. Bounteous rains in the middle of that year marked the end of another disastrous drought; its ravages, however, were not so severe as in 1902. In 1921 there was a marked increase in the number of sheep and cattle. Despite a decline in wool production, and the rapid development of the agricultural, dairying, and mining industries in the past twenty years, the pastoral industry has developed in the direction of cattle-raising and meat-production, and still maintains supremacy among primary industries. It contributes approximately one-third of the total value of the primary production of the State.

#### LIVE STOCK.

New South Wales does not possess any indigenous animals which would give rise to a large industry, and, of those introduced, sheep only may be said to have developed in such a way as to become a prolific source of wealth-production; indeed, the development of the sheep industries has been so remarkable that it has, in a sense, precluded the rise of other pastoral activities. Horses have been bred principally for their utility in various industries, but a small oversea trade has sprung up in remounts. For many years cattle were produced only to supply local requirements of meat and dairy produce, but since the application of refrigeration to sea cargoes, an export trade in these commodities has become possible, and since 1910 considerable expansion has taken place in the number of cattle depastured in the State. Pigs are bred principally as a by-product of the dairying industry, and the number does not fully meet local requirements.

The following table shows the number of live stock in New South Wales at the end of each decennial period from 1861 to 1911, and in 1921 :—

Year.	Horses.	Cattle.	Sheep.	Pigs.
1861	233,220	2,271,923	5,615,054	146,091
1871	304,100	2,014,888	16,278,697	213,193
1881	398,577	2,597,348	36,591,946	213,916
1891	469,647	2,128,838	61,831,416	253,189
1901	486,716	2,047,454	41,857,099	265,730
1911	685,004	3,194,236	44,947,287	371,093
1921*	663,178	3,375,267	33,851,828	306,253

\* At 30th June.

In addition to the live stock shown above at the 30th June, 1921, there were 30,785 goats (including 4,517 Angoras), 1,273 camels, 47 donkeys, 182 mules, and 382 ostriches. Since 1891 sheep have diminished in number to the extent of nearly 30 millions; horses have increased by 194,000, and cattle by 1,246,000, while, since 1911, the number of pigs has decreased by 65,000.

*Comparison—Live Stock in the Commonwealth.*

A comparison for 1920-21 of the numbers of horses, cattle, sheep and swine in New South Wales and in the other States of the Commonwealth, is shown in the following table. The figures for New South Wales and South Australia are as at 30th June, 1921, for Victoria and Tasmania as at 1st March, 1921, and the others are as at 31st December, 1920.

State.	Horses.	Cattle.	Sheep.	Swine.
New South Wales ... ..	663,178	3,375,267	33,851,828	306,253
Victoria ... ..	487,503	1,575,159	12,171,084	175,275
Queensland ... ..	741,024	6,455,067	17,404,840	104,370
South Australia ... ..	268,187	376,399	6,359,444	78,395
Northern Territory ... ..	37,837	659,840	6,062	1,416
Western Australia ... ..	178,664	849,803	6,532,965	60,581
Tasmania ... ..	39,117	208,202	1,570,832	38,116
Australia ... ..	2,415,510	13,499,737	77,897,055	764,406

The above table shows that New South Wales contains the largest proportion in the Commonwealth of sheep, 43·5 per cent., and swine, 40·1 per cent.; whilst in Queensland there are 30·7 per cent. of the horses and 47·8 per cent. of the cattle.

*Distribution of Live Stock.*

In order to indicate the parts of New South Wales in which the flocks and herds predominate, the following table has been prepared, showing the number of live stock and the number per square mile in each Division at intervals since 1891:—

Division.	Number of Live Stock (000 omitted).				Number per square mile.			
	1891.	1901.	1911.	1921.	1891.	1901.	1911.	1921.
<b>SHEEP—</b>								
Coastal Belt ... ..	1,483	1,097	1,433	940	42·5	31·4	41·0	26·9
Tableland ... ..	7,882	8,859	8,961	6,747	195·3	219·5	220·0	167·2
Western Slopes ... ..	10,869	11,672	11,199	8,737	286·8	308·0	295·5	230·6
Central Plains and Riverina ...	25,194	14,706	16,048	12,886	351·8	205·4	224·1	180·0
Western Plains ... ..	16,403	5,523	7,306	4,542	130·6	44·0	58·2	36·2
Whole State ... ..	61,831	41,857	44,947	33,852	199·2	134·9	144·8	109·1
<b>CATTLE, DAIRYING—</b>								
Coastal Belt ... ..	197	284	653	674	5·6	8·1	18·7	19·3
Tableland ... ..	67	70	107	73	1·7	1·7	2·7	1·8
Western Slopes ... ..	37	40	78	59	1·0	1·1	2·1	1·6
Central Plains and Riverina ...	35	20	48	36	0·5	0·3	0·7	0·5
Western Plains ... ..	7	4	9	2	0·1	0·0	0·1	0·0
Whole State ... ..	343*	418*	895	844	1·1	1·3	2·9	2·7
<b>CATTLE, OTHER—</b>								
Coastal Belt ... ..	640	667	915	1,009	18·3	19·1	26·2	28·6
Tableland ... ..	465	501	550	580	11·5	12·4	13·6	14·4
Western Slopes ... ..	247	306	422	441	6·5	8·1	11·1	11·6
Central Plains and Riverina ...	339	115	202	369	4·7	1·6	4·2	5·2
Western Plains ... ..	94	41	110	132	0·7	0·3	0·9	1·1
Whole State ... ..	1,785	1,630	2,299	2,531	5·8	5·3	7·4	8·2
<b>HORSES—</b>								
Coastal Belt ... ..	163	161	207	203	4·7	4·6	5·9	5·8
Tableland ... ..	92	112	127	112	2·3	2·8	3·1	2·8
Western Slopes ... ..	76	111	180	168	2·0	2·9	4·8	4·4
Central Plains and Riverina ...	95	78	140	152	1·3	1·1	2·0	2·1
Western Plains ... ..	44	25	35	23	0·4	0·2	0·3	0·2
Whole State ... ..	470	487	689	663	1·5	1·6	2·2	2·1

\* Cows in milk only; dry cows and springing heifers are included in the total of Other Cattle.

The table indicates also the distribution of live stock over the State. Sheep are depastured principally in the hinterland of the State, and are densest in the Western Slopes Division. Dairying cattle and, in fact, all cattle are most numerous in the coastal areas, though considerable numbers exist on the tablelands. Horses, too, are most numerous in the coastal belt, probably because farming needs are greatest there, and because of their accumulation in Sydney and other populous centres. The table, moreover, affords interesting particulars as to the localities most susceptible to losses of sheep through drought. The greatest decline since 1891 has been on the Central Plains and Riverina, where the numbers have fallen from 352 to 180 per square mile, and the greatest relative decline on the Western Plains, where the falling-off has been from 131 to 36 per square mile.

Particulars regarding the distribution of the live stock in accordance with the size of the holdings on which they were depastured as at 30th June, 1921, are shown in the following statement; the classification of the holdings is based on the area of alienated land only, but in calculating the number of stock per acre the area of Crown lands attached to alienated holdings has been taken into consideration. The holdings classified as "Crown lands only" are those leased from the Crown and not attached to alienated holdings, and the figures under the category "Live Stock only" relate to live stock depastured on commons or on areas less than 1 acre in extent:—

Area Series Alienated Holdings).	Number at 30th June, 1921.			Per 100 Acres (Alienated and Crown Lands.)			Per cent. of Total.		
	Sheep.	Cattle.	Horses.	Sheep.	Cattle.	Horses.	Sheep.	Cattle.	Horses.
1 to 30 ...	50,850	45,939	23,944	8.5	7.7	4.0	0.1	1.3	3.6
31 to 400 ...	1,745,550	1,108,116	180,413	9.8	6.2	1.0	5.2	32.8	27.2
401 to 1,000 ...	4,071,583	616,885	145,494	14.9	2.3	0.5	12.0	18.3	21.9
1,001 to 10,000 ...	15,100,967	957,579	157,211	22.6	1.4	0.2	44.6	28.4	23.7
10,001 and over ...	10,160,370	421,752	40,976	31.7	1.3	0.1	30.0	12.5	6.2
Crown lands only ...	2,793,670	171,088	45,005	9.6	0.6	0.2	8.0	5.1	6.8
Live stock only ...	18,838	53,908	70,135	...	...	...	0.1	1.6	10.6
Total ...	33,851,828	3,375,267	663,178	19.6	2.0	0.4	100	100	100

The sheep on holdings of which the alienated area did not exceed 1,000 acres represented only 17 per cent. of the total sheep in the State, and 75 per cent. were on holdings over 1,000 acres. More than 50 per cent. of the cattle were on holdings not exceeding 1,000 acres; the majority of the dairy herds are in the coastal belt where the holdings are comparatively small, the cattle on the larger areas of the hinterland being used mainly for beef. Nearly half the horses are on holdings from 31 to 1,000 acres in extent, and the proportion on the very small or very large areas is comparatively low.

The number of sheep per 100 acres increases with the size of the holdings though in the largest area group it is less than 32, the general average for the State being less than 1 sheep to 5 acres. In regard to the cattle and horses the number per 100 acres decreases as the area of the holdings increases, the general average being 1 head of cattle to 50 acres, and 1 horse to 250 acres. Live stock were depastured on 25,955 holdings on which there was no cultivation, but there were only 1,516 cultivated holdings without live stock thereon, and the total number of cultivated holdings in the State was 48,664. The total number of holdings used for all purposes

was 80,065, and, excluding those used for poultry and bee farming, mining and residential purposes, there were 45,940 single purpose holdings used for either agriculture, or dairying or grazing, and 28,268 holdings were used for mixed farming, viz., 24,448 for agriculture in combination with either dairying or grazing, 2,271 for dairying and grazing, and 1,549 for all three purposes.

## SHEEP.

With a view to testing the adaptableness of New South Wales to sheep-raising, sheep of a high-class variety for wool-bearing were first introduced in 1797, when a small lot of Spanish Merinos—originally from the Escorial or Royal flock of Spain—were brought from the Cape of Good Hope for Captain Macarthur. This flock was established at Camden, and was increased by others of the same type from the Royal flock at Kew, England, in 1804. Other breeders later imported a number of high-class rams from Germany and some ewes, while a few of the Rambouillet blood from France were also imported. But the flock at Camden held the leading stud position in the colony for thirty years, and was in considerable demand by the pioneers of the wool-growing industry.

After 1830 the Camden pastures and flocks deteriorated, and the Mudgee district, until 1870, became the principal centre for merino stud flocks. Thereafter high-class studs steadily gained repute in various parts of the State, and excellent breeding strains have since become distributed widely. Improvement in sheep types, as regards wool-bearing, has now proceeded so far that little room exists for further improvement in stud sheep, and at a recent conference of wool-growers it was urged that attention be confined principally to improving the general standard of flocks.

The following table shows the number of sheep at the close of each quinquennial period from 1861 to 1901, and illustrates the vicissitudes of sheep-breeding in New South Wales in the past twenty years:—

Year.	Sheep.	Average Annual Rate of Increase.	Year.	Sheep.	Average Annual Rate of Increase.	Year.	Sheep	Average Annual Rate of Increase.
1861	5,615,054	..	1903	28,656,501	7.5	1913	39,850,223	2.1
1866	11,562,155	15.5	1904	34,526,894	20.5	1915*	33,009,038	(—)11.8
1871	16,278,697	7.1	1905	39,506,764	14.4	1916*	32,600,729	(—)1.2
1876	25,269,755	9.2	1906	44,132,421	11.7	1917*	36,196,383	11.3
1881	36,591,946	7.7	1907	44,461,839	0.7	1918*	38,621,196	6.5
1886	39,169,304	1.4	1908	43,370,797	(—)2.5	1919*	37,381,874	(—)3.2
1891	61,831,416	9.6	1909	46,202,578	6.5	1920*	29,249,253	(—)21.8
1896	48,318,790	(—)4.8	1910	45,560,969	(—)1.4	1921*	33,551,828	15.7
1901	41,837,099	(—)2.8	1911	44,947,287	(—)1.3			
1902	26,649,424	(—)36.4	1912	39,044,502	(—)13.1			

\* At 30th June. (—) Denotes decrease.

Since 1880 the years when the pastoral areas were affected severely by drought have been 1881, 1884, 1885, 1888, 1895–6, 1897, 1899, 1902, 1907, 1912, 1914, and from February, 1918, to June, 1920. The last-mentioned was the longest drought, but the losses of stock were not so numerous as in 1902, probably on account of the fact that in the earlier year a greater number of sheep were depastured in large flocks and in the western portion of the State, where the effects of drought were most severe.

The flocks, which had decreased heavily during the fifties, grew at a remarkable rate after 1861, and a virtual boom in sheep-breeding prevailed for thirty years, despite the fact that wool values gradually declined from 1870 to 1902.

Though heavy decreases in the number of sheep in the State occurred in the year 1877 and 1884, these losses were regained quickly, and an otherwise almost unbroken series of increases continued each year until the remarkable total of nearly sixty-two millions was reached in 1891. These years present a marked contrast to the years which followed, when the rabbit pest had become so general as to aggravate the effects of dry weather through destruction to natural herbage.

Between 1891 and 1901 there was a decline of twenty millions in the number of sheep, then occurred the disastrous drought during which the flocks were reduced by over 36 per cent. The years which followed were remarkably favourable, and the increase was so rapid that the number in 1906 was greater by over 2½ millions than in 1901.

Between 1906 and 1911 the number of sheep was at an almost constant level of about 44 millions, and this may be considered as the approximate carrying capacity of the State during ordinarily good seasons. The heavy decline which commenced with the drought of 1912 was accentuated by the recurrence of bad seasons at short intervals, culminating in the drought of 1919-20. As a consequence the number of sheep in the State was reduced nearly to the low level of 1902. In 1921 there was an increase of 4½ millions or more than half the number lost during the previous year, but the total remained nearly 25 per cent. below normal. It is contended that the flocks of 1891 exceeded the sheep carrying capacity of the State, and that a large proportion of the subsequent decline was inevitable. Point is given to this contention by the fact that the number of sheep in the State has not reached 50 millions in any year since 1894, and has exceeded 45 millions twice only.

An important factor was the rise after 1900 of an export trade in canned and frozen mutton, which competed with the raising of sheep for wool. The growth of the agricultural industry also caused land to be diverted from the purpose of sheep breeding.

The following statement shows the extent to which the flocks were affected by the various causes of increase and decrease during the last two seasons; the figures are approximate only :—

Particulars.	1920.	1921.
Number of Sheep at beginning of Year	37,382,000	29,249,000
Lambs Marked ... ..	4,533,000	7,907,000
Sheep Imported ... ..	1,465,000	3,056,000
Total additions during year ...	5,998,000	11,063,000
Gross Total Sheep existent during Year	43,380,000	40,312,000
Sheep—Slaughtered ... ..	5,537,000	3,851,000
Exported ... ..	2,842,000	1,972,000
Lost through Drought, etc. ...	5,751,000	1,538,000
Total Deductions during year...	14,131,000	6,460,000
Number of Sheep at end of Year ...	29,249,000	33,852,000
Net Increase or Decrease ... ..	(-) 8,133,000	(+) 4,603,000

In connection with the figures shown above, it is to be pointed out that the number of sheep exported consists principally of flocks driven across the border into other States, either in search of pastures or to other owners;

and, although many of these sheep do not return to the State, it is probable that a fair proportion do. The most serious effect of drought, however, is the severe reduction caused in the lambing or natural increase, which, in years of drought, falls far below the totals of sheep exported and slaughtered; the number of lambs marked during the last six seasons is shown below :—

Year ended 30th June.	Number of Sheep at beginning of Year.	Number of Lambs Marked during Year.	Year ended 30th June.	Number of Sheep at beginning of Year.	Number of Lambs Marked during Year.
1916	33,009,038	7,362,090	1919	38,621,196	7,812,000
1917	32,600,729	9,150,000	1920	37,381,874	4,533,000
1918	36,196,383	9,262,090	1921	29,249,253	7,107,000

The number of lambs marked during 1921 was nearly 75 per cent. higher than in the previous season.

#### *Size of Flocks.*

The decrease in the total number of sheep after 1891 was accompanied by great changes in the size of individual flocks, showing the tendency among pastoralists to restrict their flocks to sizes where the risk of loss from drought was not so great. These changes may be traced in the following table, which gives an approximate classification of the flocks for various years, from 1891 to 1921 :—

Size of Flocks.	Number of Flocks.				Number of Sheep.			
	1891.	1901.	1911.	1921.†	1891.	1901.	1911.	1921.†
1—1,000 ...	7,606	11,800	17,773	19,905	2,794,751	3,797,114	5,252,546	5,983,607
1,001—2,000 ..	1,954	2,351	3,510	3,459	2,970,168	3,560,849	5,149,018	4,882,170
2,001—5,000 ..	1,696	1,722	2,735	2,310	5,493,942	5,519,008	8,554,209	7,083,742
5,001—10,000 ...	686	729	847	722	4,943,221	5,210,117	5,977,233	4,955,413
10,001—20,000 ...	495	465	507	349	7,056,580	6,666,429	7,143,273	4,850,005
20,001—50,000 ...	491	344	296	149	15,553,774	10,552,373	8,737,927	4,185,143
50,001—100,000 ...	186	76	53	26	12,617,206	4,835,547	3,434,698	1,688,675
100,001 and over ...	73	12	6	2	10,392,774	1,588,103	697,693	223,673
Total ...	13,187	17,490	25,727	26,922	61,831,416	41,857,099*	44,947,287	33,851,828

\* Includes 127,559 sheep in unclassified flocks.

† 30th June.

In 1891 there were only 13,187 holdings carrying sheep, but at 30th June, 1921, they numbered 26,922, although the sheep had decreased by nearly 28 millions. This development is due to the subdivision of large holdings, and to the combination of pastoral with agricultural pursuits.

It is significant that while in 1891 there were 73 holdings which each carried over 100,000 sheep, the number of such in 1901 was 12, and in 1921 only 2. The sheep in flocks of over 20,000 comprised 62 per cent. of the total in

1891, but only 18 per cent. in 1921; while in 1891 the flocks under 2,000 comprised 9·3 per cent. of the total sheep compared with 32·1 per cent. in 1921. The greatest change has occurred since 1894, when a very large number of sheep perished, and pastoralists realised that the best method of meeting seasons of drought lay in the subdivision of their large flocks. The closer settlement policy pursued since 1904 has led to some further subdivision of flocks.

Part of the cause and perhaps part of the effect of this change has been a corresponding movement towards smaller holdings and the gradual disappearance of unwieldy pastoral areas, whereon, formerly, sheep were left to roam with little attention, because of the dearth of labour and of the vast unpeopled spaces which existed in the earlier years.

A comparison over a period of ten years shows how rapidly this movement has progressed in recent years. In this table the holdings are classified according to the total area of alienated and Crown lands, therefore they differ from those in an earlier table in which the area groups relate to the alienated land only.

Area Groups. (Alienated and Crown Lands.)				Number of Flocks.		Number of Sheep.		Proportion to total Flock.		Proportion to total Sheep.	
				1911.	1921.	1911.	1921.	1911.	1921.	1911.	1921.
Acres.								per cent.	per cent.	per cent.	per cent.
1 and under	51	...	...	1,092	547	31,044	20,278	4·3	2·1	0·1	0·1
51 "	101	...	...	811	658	46,283	39,944	3·2	2·5	0·1	0·1
101 "	501	...	...	5,796	5,878	990,532	993,602	22·9	22·1	2·2	2·9
501 "	1,001	...	...	5,187	6,192	2,018,657	2,138,883	20·5	23·3	4·5	6·3
1,001 "	5,001	...	...	9,131	9,789	11,476,326	9,911,100	36·0	36·9	25·6	29·3
5,001 "	10,001	...	...	1,562	1,790	5,986,131	5,012,518	6·2	6·7	13·4	14·8
10,001 "	20,001	...	...	763	822	5,282,861	4,435,130	3·0	3·1	11·8	13·1
20,001 "	50,001	...	...	572	530	7,460,659	4,543,806	2·3	2·0	16·7	13·5
50,001 "	100,001	...	...	201	161	4,313,882	2,333,085	0·8	0·6	9·6	6·9
100,001 and upwards	...	...	...	211	175	7,165,514	4,379,129	0·8	0·7	16·0	13·0
Ill-defined areas	...	...	...	401	380	175,398	44,053	...	...	...	...
Total	...	...	...	25,727	26,922	44,947,287	33,851,828	100·0	100·0	100·0	100·0

In 1911, 42·3 per cent. of the sheep were depastured on holdings of 20,001 acres and upwards, whilst in 1921 only 33·4 per cent. were so depastured. The holdings up to 20,000 acres carried 66·6 per cent. of the total number of sheep in 1921, having increased from 56·7 per cent. in 1911.

### *Breeds of Sheep.*

The principal breed of sheep in New South Wales is the celebrated short-woolled merino strain. Crosses of long-woolled breeds mainly with the Merino are numerous and important, but the numbers of other breeds are small. English long-woolled sheep are represented chiefly by the Lincoln,

Romney Marsh and Border Leicester breeds. Suffolk and Dorset Horn sheep have been introduced for the raising of early-maturing lambs.

At the close of 1920, the numbers of the various breeds were as shown below; the figures are based on returns collected for assessment purposes by the Chief Inspector of Stock, and are below the actual number depastured, as particulars of flocks of less than 100 sheep are not collected.

Class of Sheep.	Rams.	Ewes.	Wethers.	Lambs.	Total.
Merino ... ..	409,823	12,438,778	5,997,060	3,141,337	21,986,998
Other Breeds—					
Lincoln ... ..	45,409	227,818	59,030	72,441	404,698
Border Leicester...	9,806	36,885	10,814	18,689	76,194
English Leicester..	3,429	7,858	1,584	3,527	16,398
Romney Marsh ...	11,697	113,861	27,079	71,527	224,164
Shropshire ...	1,994	22,134	5,699	9,324	39,151
Corriedale ...	2,983	41,313	14,359	17,062	75,717
Southdown ...	451	6,458	1,861	4,373	13,143
Dorset Horn ...	98	1,069	140	118	1,425
Crosses ... ..	18,390	4,539,182	1,971,431	1,529,944	8,058,947
Total ... ..	504,080	17,435,356	8,089,057	4,868,342	30,896,835

Lincolns, and their crosses with merinos, constitute the largest proportionate number of coarse-woolled varieties. The proportion of English and cross-bred sheep has increased considerably during recent years. In 1891 the ratio of coarse-woolled and cross-bred sheep to the total was 3 per cent., but with the development of the meat-export trade it has since advanced to 29 per cent.

Year.	Merino.	Other	Total.	Per cent. of Total.	
				Merino.	Other.
1881... ..	34,412,900	2,179,000	36,591,900	94	6
1891... ..	60,252,400	1,579,000	61,831,400	97	3
1901... ..	38,886,000	2,971,000	41,857,000	93	7
1911... ..	37,047,400	6,283,900	43,331,300	85	15
1920... ..	21,987,000	8,909,800	30,896,800	71	29



On account of the mildness of the climate the necessity for housing stock during the winter months does not exist in New South Wales. The sheep are kept usually in paddocks.

### *Sheep Breeding.*

The increased attention paid to cross-breeding in order to supply the demands of the frozen-mutton trade, and the increase in the number of settlers on small and moderate-sized holdings who combine grazing with agriculture, have together emphasised the necessity of conducting experimental breeding on a scientific basis, and of providing instruction for sheep-farmers. To meet this necessity a sheep and wool expert of the Department of Agriculture organises the class work conducted at State experiment farms, delivering lectures and giving demonstrations in country centres.

Cross-breeding experiments on a comprehensive scale were commenced in 1910 at the Wagga Wagga, Cowra, Bathurst, and Glen Innes Experiment Farms, the work being carried out specially in the interests of the farmer or small grazier, who has the facilities for breeding lambs for market. Both the long and the short woolled breeds were crossed with the Merino, with the object of obtaining the most desirable characteristics of each group, so that all these qualities could be incorporated in a single strain. In the first step in the evolution of a dual-purpose sheep for wool and for mutton, long-woolled rams were mated with Merino ewes. Then the early-maturing and exceptional mutton qualities of the short-woolled varieties—Southdowns, Shropshires, and Dorset Horns—were utilised by mating rams of these breeds with the cross-bred ewes, for the production of a lamb suitable both for local consumption and for shipping. The final results of the investigations form the subject of a special "Farmers' Bulletin," issued by the Department of Agriculture in August, 1920, and the conclusion arrived at favoured the mating of merino ewes with sires of British breeds, in view of the adaptableness of the former to seasonal conditions.

The breeds of long-woolled sheep employed were the Lincoln, the Leicester, and the Border Leicester. The Border Leicester crosses showed a material increase in body-weight over the other crosses at practically all ages. In wool production the Lincoln crosses maintained superiority, but as the Border Leicester wool commanded a higher price per lb., there was a tendency to balance the discrepancy.

In proportion of dressed-weight to live-weight, the Border Leicester was consistently above the Lincoln; the Leicester surpassed it only once. In flesh value per lb. the Leicester showed to advantage, but taken into consideration with dressed weights, the results showed that at all ages the carcase value of the Border Leicester was greater than that of the other crosses.

### *World's Sheep Flocks.*

Amongst the sheep flocks of the world those of Australia have pre-eminence in numbers, and a very large proportion of the world's supplies of wool and frozen mutton are derived from Australia. New South Wales is by far the largest sheep-raising State of the Commonwealth. A comparison of the sheep flocks of the leading sheep countries of the world is made below, and some indication is given of the expansion or decline in each country by

including statistics for earlier years. Most of the information is taken from the Year Book of the United States Department of Agriculture (1920).

Country.	Date.	Number of Sheep (thousands.)	Date.	Number of Sheep (thousands.)
New South Wales ...	1891	61,831*	June, 1921	33,852
Victoria... ..	1907	14,147	March, 1921	12,171
Queensland ... ..	1914	23,130*	Dec., 1920	17,405
Australia ... ..	1891	106,420*	1921	77,891
Russian Empire ...	...	...	1914	86,421
United States ... ..	1903	63,965*	Jan., 1921	45,067
Argentina ... ..	1895	74,360*	Dec., 1918	45,309
South Africa ... ..	1904	16,323	1919	28,492
New Zealand ... ..	1911	23,996	April, 1921	23,285
Uruguay ... ..	...	...	1916	11,473
Turkish Empire ...	1905	23,614	1919	11,200
India (British)... ..	1904-05	17,562	1917-18	22,895
Spain ... ..	1906	13,481	1918	18,601
Italy ... ..	1908	11,163	April, 1918	11,754
France ... ..	1900	20,180	Dec., 1919	8,991

\* Greatest number recorded.

It is apparent that in recent years there has been a serious decline in the number of sheep in the leading producing countries, and that the increases shown, *e.g.*, in South Africa, do not go very far towards counterbalancing the diminution in the world's flocks.

### WOOL.

The prosperity of New South Wales for many years has depended very largely on the condition of the wool market of the world, and the value of the wool-clip is still the most important factor of the year in the primary production of the State.

The introduction and careful improvement of high-strains of wool-bearing sheep in the early years of the colony did not lead at once to any large export trade in wool. The rise of the great and flourishing wool-trade had a small beginning, and many difficulties were experienced before it became established. It is probable that the first wool exported was a small parcel of 245 lb. in 1807. The following table shows with what rapid strides the industry advanced in New South Wales from the year 1821, when official statistics of exports of wool first became available :—

Year.	Quantity of Wool Exported (Produce of N.S.W.)	Year.	Quantity of Wool Exported (Produce of N.S.W.)
	lb.		lb.
1821	178,000	1871	65,612,000
1841	8,611,000	1881	139,602,000
1851	32,362,000	1891	331,807,000
1861	18,171,000	1901	273,141,019

The decline during the fifties was due to the neglect of the pastoral industry occasioned by the gold-rushes. This decline, however, was not so great as would appear from the above figures, because in 1851 and previous years the exports of the districts, which afterwards became Victoria and Queensland, are included. The development in recent years has been due to the rapidly expanding market for wool to supply raw material for the great textile industry, the rise of which had become possible through the mechanical inventions which characterised the Industrial Revolution.

*Prices of Wool.*

On account of the very large number of varieties of wool, it is a matter of great difficulty to obtain price-quotations which will show accurately the fluctuations of values from year to year.

However, from such data as are available it appears that for the last thirty years of the nineteenth century the prices realised for wool in London continually moved downwards, and this is illustrated in the following comparison :—

Period.						Average price of Greasy Wool per lb., London.
						d.
1871-80	...	...	...	...	...	11.1
1881-90	...	...	...	...	...	9.4
1891-1900	...	...	...	...	...	8.6

The particulars required to continue this table for later years are not available, but the decline reached its lowest point early in 1902, when a revival began. The subsequent variations in wool-values are reflected with some degree of precision in the following table, which shows the average prices of wool, f.o.b. Sydney, as calculated from the Customs returns in each year since 1901 :—

Year.	Average Prices per lb.		Year.	Average Prices per lb.		Year.	Average Prices per lb.	
	Greasy.	Scoured.		Greasy.	Scoured.		Greasy.	Scoured.
	d.	d.		d.	d.		d.	d.
1901	7½	13½	1908	9½	16½	1915†	9	15
1902	8½	16½	1909	9½	14½	1916†	10¾	16¾
1903	9½	18	1910	9½	15½	1917†	15¾	21¾
1904	8½	18½	1911	9½	14¾	1918†	16¾	24½
1905	10½	18¾	1912	9½	14½	1919†	16	21¾
1906	10¾	19½	1913	9½	16	1920†	16	24¾
1907	11½	20½	1914*	9½	14½	1921†	13¾	24

\*Six months, January-June.

† Year ended 30th June.

A comparison of average prices of wool on a basis of greasy wool is not entirely satisfactory, as the market price of the clip in any season is affected by the proportion of natural grease which the wool contains, as well as by such qualities as length, fineness, and soundness. The quantity of grease varies according to the seasonal conditions, as wool grown in a good season carries more grease than in a dry period. The feeding of sheep on rich rations for the purpose of obtaining a weighty carcase for export also causes an increase in the proportion of grease in the wool.

*Production of Wool.*

The following table shows the production of wool in New South Wales in quinquennial periods since 1876, distinguishing the exports and the local consumption. The exports comprise both washed and greasy wool, but the actual weight of exports does not show the production clearly with regard to quantity. The proportion of washed and greasy wool varies each year, but it is approximately 1 lb. of washed to 2 lb. of greasy, and the washed wool is here stated as in grease.

It seldom happens that the wool of any particular season is exported during the year in which it is shorn, and this applies more particularly since 1914, because shipping facilities have been limited, markets have been

deranged, and large quantities of wool have been held in store for several years awaiting opportunities of shipment and sale.

The values given in the table represent the export values free on board Sydney, and consequently differ from those on a later page, which show the values at the place of production.

Period.	New South Wales Wool.—Quantity. (000 omitted.)			Value. (000 omitted.)		
	Exported, or available for Export.	Used Locally.	Total Production.	Exported, etc.	Used Locally.	Total Value (F.O.B., Sydney).
	lb.	lb.	lb.	£	£	£
1876-1880	713,519	4,878	718,397	31,076	222	31,298
1881-1885	939,606	4,208	943,814	40,381	182	40,563
1886-1890	1,290,920	3,861	1,294,781	44,642	131	44,773
1891-1895	1,808,008	5,622	1,813,630	48,893	132	49,025
1896-1900	1,401,170	7,070	1,408,240	42,783	201	42,984
1901-1905	1,297,118	5,467	1,302,585	46,529	190	46,719
1906-1910	1,811,746	5,416	1,817,162	73,437	173	73,610
1911-1915*	1,494,104	12,976	1,507,080	57,445	511	57,956
1916†	255,578	6,467	262,045	12,010	281	12,291
1917†	263,968	6,537	270,525	17,453	297	17,750
1918†	278,521	5,667	284,188	19,253	285	19,538
1919†	298,844	6,769	305,613	20,010	364	20,374
1920†	289,008	7,633	296,641	19,378	398	19,776
1921†	232,351	7,880	240,231	13,381	382	13,763

\* $4\frac{1}{2}$  years ended 30th June.

†Year ended 30th June.

Prior to 1876 distinction was not made between washed and greasy wool, so that any attempt to estimate the production is surrounded with difficulty. From the information available, it would appear, however, that the production in 1861 was 19,254,800 lb., and, in 1871, 74,401,300 lb.

Through the very successful endeavours to increase the wool-bearing capacity of sheep, it is noteworthy that the year of greatest wool production, 1910, came much later than the year 1891, when the greatest number of sheep existed.

In the earlier year there were 61,831,000 sheep, and the wool produced amounted to 375,600,000 lb.; in 1901 the corresponding figures were—sheep, 45,561,000, and wool, 415,338,000 lb.

It is apparent, therefore, that the pastoral wealth of the State does not depend so much on the number of sheep which it contains as on the quantity and quality of its wool. The average price realised for wool is also an important determining factor, but that in its turn is determined partly by quality, though the economic condition of the world causes its principal variations.

#### Wool Marketing.

For many years the whole of the wool grown in New South Wales was shipped to England, which was at first the only country where textile fabrics were manufactured on a large scale, and where sales were conducted. As the improvement of machinery for dealing with wool progressed, people in other parts of the world, especially on the Continent, were encouraged to acquire machinery and wool from England in order to manufacture for themselves. Hence, an increasing number of foreign buyers began to attend the wool sales in London, and, as competition intensified, a tendency developed to seek supplies of the raw material at its bases. This tendency happily harmonised with Australian interests, for, ever since the first attempt by

Mr. T. S. Mort to inaugurate public wool sales in Sydney in 1843, efforts to market the wool clip locally had met with small success, and growers were subjected to the inconvenience, uncertainty, and delay, often amounting to a year, inseparable from the system of selling their products in markets on the other side of the world.

Sydney wool sales began to assume importance about the year 1885, and at the time of the initiation of the Imperial Wool Purchase Scheme in November, 1916, about 85 per cent. of the successive wool clips of New South Wales was sold annually in Sydney to representatives of firms in practically every foreign country where woollen goods were manufactured on an extensive scale. Between November, 1916, and 30th June, 1920, all local wool was acquired by the Imperial Government by appraisement, and public wool sales were not resumed in Sydney until 5th October, 1920.

During the current season buyers from the United Kingdom, from the large manufacturing countries of the Continent, and from the United States of America and Japan attended the local sales.

#### *The Imperial Wool Purchase Scheme.*

Particulars of the scheme under which the Imperial Government purchased Australian wool during 1916-17 were given in the 1916 issue of this Year Book; similar arrangements were made for the acquisition of the wool of the season 1917-18. Subsequently an offer of the Imperial Government to extend the purchase of the Australian wool-clip for the period of the war and for one wool-year thereafter was accepted, and the contract, therefore, expired on 30th June, 1920. Details of the development of the scheme were published in the 1919 issue of this Year Book.

The management of the scheme in Australia was controlled by the Central Wool Committee, consisting of representatives of the various interests concerned.

The wool was purchased at rates designed by appraisement to yield an average of 15½d. per lb. for each clip in the grease, and, in the later purchases, an arrangement was made whereby the growers should participate to the extent of 50 per cent. in profits made by the Imperial Government on sales of wool for civilian purposes.

Eventually Australian wool was graded for appraisement purposes into 848 distinct types, for each of which a maximum price was fixed.

During the period of control from November, 1916, to June, 1920, the total quantity of wool appraised was 2,274,164,123 lb.; the local manufacturers purchased 82,157,481 lb., and the balance, 2,192,006,642 lb., was sold to the Imperial authorities. The sheepskins purchased on behalf of the Imperial Government amounted to 122,067,170 lb., and the value was £5,280,088; of these 26,939,792 lb., valued at £1,155,314, were acquired in New South Wales. Particulars of each season are shown in the following statement:—

Season.	Wool.				Sheepskins.	
	Greasy.	Scoured.	Total Weight.	Value (Flat rate.)	Weight.	Value.
	lb	lb	lb	£	lb	£
1916-17	323,752,519	34,307,991	358,060,510	25,340,466	11,542,325	433,603
1917-18	569,612,721	47,340,301	616,953,022	42,902,277	24,241,856	1,031,414
1918-19	599,433,446	52,659,353	652,097,799	45,515,566	38,197,762	1,665,283
1919-20	579,709,381	67,343,411	647,052,792	46,138,088	48,085,227	2,149,788
Total	2,072,513,037	201,651,056	2,274,164,123	159,896,397	122,067,170	5,280,088

During the war period the shipments of wool consisted mainly of certain qualities of cross-bred wool, suitable for military and naval purposes, but when the armistice was signed the demand reverted to the merino and fine cross-bred wools for the manufacture of materials for civilian purposes.

*British-Australian Wool Realisation Association, Limited.*

The existence of large quantities of wool in Australia—the “carry-over” of previous years—was not an isolated feature of the wool position on 30th June, 1920. Large stocks of Australian wool were held also in England, and similar stocks of New Zealand, South African, and other wools, which had not been consumed during the war, were known to exist, while a large Australian clip was about to be shorn.

It was expected that this unprecedented situation would hold buyers in check, in anticipation that big holdings would be placed on the market which would cause a drop in the high prices which ruled during the war. When sales to the Imperial Government ceased, that Government had huge stocks upon its hands and a new Australian clip was being shorn. The position of the market was perilous, and grave danger existed of a sudden and heavy fall in prices unless the situation was handled carefully. The first auction sale held in Sydney after the war commenced on 5th October, 1920. At this sale, although prices for superior wools showed a substantial improvement on appraisement prices, the offerings were selected and small, and, throughout the ensuing sales, lower grades of merino wool and most cross-bred wools were practically unsaleable. Moreover, the European demand, except for some weak bidding from France, was absent. The market showed little sign of revival and offerings were carefully regulated. By December, 1920, of 120,000 bales submitted to auction in Sydney, 88,124 bales, or somewhat less than 20 per cent. of the clip, had been sold, and superfine wools had brought record prices. But, as the post-war demand for manufactured woollen goods began to fail toward the close of the year, many contracts were cancelled, and the prices of wool-tops abroad declined heavily.

Amid these circumstances, after much discussion and several attempts to meet the difficulties, the British-Australian Wool Realisation Association, Limited (“Bawra”), was brought into being on 27th January, 1921. Its objects are “to sell, in conjunction with the current clip, that portion of the carry-over wool acquired by the Association on account of the Australian growers, also, as agents, that portion owned by the British Government, as promptly as market conditions permit, and to the best advantage, while at the same time contributing to stabilise the wool market for the benefit of wool-growers and the users of wool.” In addition to 1,836,005 bales of Australian wool, the disposal of New Zealand and South African carry-over wool owned by the British Government was undertaken by the Association as agents, making a total of 2,691,827 bales of carry-over wool controlled by it.

The stocks of wool taken over by the Association from the Imperial Government and the Commonwealth of Australia Central Wool Committee, were valued on the basis of appraised prices, plus charges incurred to 31st December, 1920, less a depreciation of all stocks of 40 per cent. The net assets of the Association, consisting of cash, wool, warehouses, plant, etc., transferred by the Central Wool Committee, were valued at £22,000,000, and priority wool certificates for £10,000,000, and share certificates to the value of £12,000,000 were issued and distributed to all companies, firms, and persons who had supplied wool to the wool pool during the currency of the Imperial wool contract.

During the four seasons, 1916 to 1920, the total value of the wool appraised by the Central Wool Committee had amounted to £153,743,857, so that each woolgrower received an interest in the Association amounting to nearly one-seventh of the appraised value of the wool he had contributed, *i.e.*, the ratio of £22,000,000 to £153,743,857. The interests of growers whose wool was valued at amounts not exceeding £100, and fractional share interests were settled by cash payments. On 30th July, 1921, payments were made to retire 47·5 per cent. of the priority certificates, and the balance was redeemed on 18th May, 1922.

The problem which confronted the Association was how to stabilise the wool-market in view of the circumstances in order to prevent the demoralisation and chaos which must result to the whole of the wool trade if prices fell below the cost of production. The difficulties were increased by the existence outside Australia of large quantities of "free" wool and the weak commercial position of the Continent, which, as a result of the war, was generally so impoverished as to be unable to supply and pay for its needs.

It was arranged in April, 1921, that the wool controlled by the Association should be marketed in conjunction with current wool clips, and not in competition with them. A Board consisting of representatives of the Association, of the wool-selling brokers, and of the wool-growers was created to determine the quantities of wool which would be submitted at the auctions in Australia and to allocate the quantities amongst the selling centres in various States.

When the wool sales opened at the end of January, 1921, it was found that the market had improved owing to a temporary stimulus in American demand in anticipation of the imposition of a duty on wool entering the United States; also on account of the appearance of Japanese buyers. But prices soon receded, even for the best wools, and values generally fell much below appraisement levels; that is, the prices obtainable in April, 1921, for what wools were saleable were such that even if all had been sold the average price for the clip would have been much less than 15½d. per lb. The position was clouded in uncertainty, and no sign of a revival of demand could be discerned, while large quantities of wool hung ominously over the market.

In view of these conditions, evidence was submitted to the Commonwealth Parliament to show that the cost of producing greasy wool in Australia exceeded 9d. per lb., amounting over a period of years to 9·44d. on leasehold properties, and 10·92d. on freehold properties, and it was suggested that a reserve limit be imposed on all sales of wool in order to obtain an average of 9d. per lb. for a full clip. As a result, a motion was carried in the Parliament that (a) regulations should be issued under the Customs Act prohibiting the export of wool beyond Australia, unless it was sold at or above such a price as would return 8d. per lb. on an average Australian clip, and (b) that the official reserve for each type of wool should be determined by the British-Australian Wool Realisation Association, Limited, in accordance with the system of appraisement applied to the wool clip of 1919-20. This resolution was given effect by a proclamation on 9th May, 1921, which continued in force for six months. The Regulations under the Customs Act were amended accordingly, and exporters of wool were required to furnish a declaration or guarantee that the prescribed conditions had been fulfilled.

No sales were held in Sydney during April, 1921, and when auctions were resumed in May it was found that a marked improvement had taken place in the demand; competition by continental buyers was strong, even for the

lower grades of wool, and Japanese buyers bid keenly for fine wools. The market conditions improved gradually during the months July to September, and the allocation committee increased the offerings, so that almost the whole of the 1920-21 clip was disposed of before the end of the year.

The sale of the new clip was commenced in October, 1921. Owing to a favourable season the quality of the wool was better than the previous clip, and with a firm market the values were in excess of the limits imposed by the regulations, which expired on 9th October, and were not renewed. The sales of the 1921-22 clip were on the whole satisfactory; competition was well sustained, fine merino and good cross-bred wool being in strong demand. The continued buoyancy of the market was a feature throughout each series of the sales, which terminated before the end of July.

### *Shipments of Wool.*

The following statement shows the destination of the oversea shipments of wool from New South Wales during the two years ended June, 1920 and 1921, in comparison with similar information for the year 1913; the figures relate to the cargoes actually despatched during the periods specified, and not to the wool sold during each season :—

Destination.	Overseas Exports of Wool (000 omitted).								
	1913.			1919-20.			1920-21.		
	Greasy.	Scoured	Tops.	Greasy.	Scoured	Tops.	Greasy.	Scoured	Tops.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
United Kingdom ...	50,120	10,609	40	146,820	25,309	1,945	80,322	18,164	422
Canada ...	...	...	...	...	...	126	127	60	287
Austria ...	7,297	33	29	...	...	...	734	293	...
Belgium ...	27,222	2,021	...	12,151	6,382	...	12,144	3,362	...
France ...	76,486	12,658	...	10,426	165	...	19,203	974	...
Germany ...	54,266	4,579	...	...	...	...	5,174	185	...
Italy ...	3,638	132	...	12,642	...	...	6,243	12	...
Japan ...	5,661	129	3,435	3,492	151	2,601	6,179	70	2,466
Netherlands ...	...	...	...	...	...	...	722	6	...
Spain ...	...	...	...	...	...	...	2,755	28	761
United States ...	4,286	85	...	8,303	1,489	554	15,236	3,217	1,344
Other Countries ...	23	2	58	...	26	...	252	45	...
Total ...	228,999	30,248	3,562	193,834	33,462	5,226	149,091	26,411	5,280

Since the termination of the Imperial wool purchase scheme the quantity of wool sent to the United Kingdom has decreased and a larger proportion has been sent direct to foreign countries, the increase being relatively greatest in respect of France, Japan, and America.

Over 75 per cent. of the wool is shipped in the greasy state, though the weight is thereby loaded with extraneous matter amounting to as much as the wool itself. It is considered that when wool is stored in tightly-packed bales for a long period it is more liable to deterioration if scoured. An important consideration is the purpose for which the wool is needed; for certain classes of factories scoured wool is purchased, and in other cases manufacturers prefer to buy greasy and to subject it to special processes in classing and scouring.



## CATTLE.

Cattle-raising, as connected with the dairying industry, is dealt with in later pages of this Year Book.

Other industries connected with cattle, such, for instance, as the export of beef, have never existed on a large scale in New South Wales. However, in recent years, an appreciable increase has been apparent in the number of cattle depastured, and the number existing in 1921 constituted a record for the State. Favoured by the rise of prices, the value of products derived from cattle increased rapidly during the war and subsequently until 1919-20; in the succeeding year the market weakened to such an extent that the value dropped by over 50 per cent. and was the lowest since 1914-15. The industry of raising cattle for the meat export trade is more responsive to fluctuations in the prices in oversea markets than in the case of the mutton trade; from sheep an annual yield of wool may be obtained, but cattle held for market are unprofitable.

The following table shows the number of cattle in the State, including dairy cattle, at the close of each quinquennial period from 1861 :—

Year.	Cattle.	Year.	Cattle.	Year.	Cattle.
1861	2,271,923	1891	2,128,838	1916*	2,405,770
1866	1,771,809	1896	2,226,163	1918*	3,161,717
1871	2,014,888	1901	2,047,454	1919*	3,280,676
1876	3,131,013	1906	2,549,944	1920*	3,084,332
1881	2,597,348	1911	3,194,236	1921*	3,375,267
1886	1,367,844				

\* At 30th June.

The principal breeds of cattle now in the State are the Durham or Shorthorn, Hereford, Jersey, Ayrshire, and Devon, besides crosses from these breeds. At the close of the year 1920 the number of each breed, so far as could be ascertained, was :—

Breed of Cattle.	Pure and Stud.	Ordinary.	Total.
Shorthorn, Milking ... ..	49,986	217,883	267,869
„ Beef ... ..	82,671	435,333	518,004
Hereford ... ..	39,451	140,756	180,207
Devon... ..	7,052	27,899	34,951
Aberdeen Angus ... ..	2,087	7,643	9,730
Norfolk Red-poll ... ..	1,557	3,430	4,987
Ayrshire ... ..	9,143	46,838	55,981
Guernsey ... ..	1,803	11,221	13,024
Holstein ... ..	821	3,480	4,301
Jersey... ..	31,951	96,528	128,479
Kerry... ..	24	...	24
Crosses ... ..	...	1,774,137	1,774,137
	226,546	2,765,148	2,991,694

The above information was extracted from the report of the Chief Inspector of Stock. It does not take account of a considerable number of cattle situated in the Metropolitan centres and in the vicinity of towns.

The number of milch cows at 30th June, 1921, was 475,785, and there were 282,208 dry dairy cows, 86,381 heifers within 3 months of calving, and 97,368 other heifers.

In order to encourage and assist dairy-farmers in improving their breeds, the Government imported high-class stud-bulls from England, and these and their progeny are either sold or kept for service at the State farms. During 1920-21 the number of calvings recorded in the State was 813,655, and 536,729 or 66 per cent. were surviving at the end of the year.

The exports of New South Wales cattle to countries overseas are unimportant.

#### HORSES.

Australian horses have acquired a high reputation. At an early period the stock of the country was enriched by the importation of some excellent thoroughbred Arabs, and it is constantly being improved by the importation of high class stock from Great Britain. The number of horses in the State steadily increased from 233,220 in the year 1861 to 518,181 in 1894; but the total had fallen in 1901 to 486,716; since that year there has been a substantial increase, and the number at the end of 1911 reached 689,004. There was a great advance in horse-breeding between 1910 and 1914, owing to the increased demand which arose as a consequence of widening settlement, prosperous seasons, and, more recently, defence requirements have provided a stimulus.

The following table shows the number of horses in New South Wales at the end of quinquennial periods since 1861:—

Year.	Horses.	Year.	Horses.	Year.	Horses.
1861	233,220	1891	469,647	1916*	719,542
1866	274,437	1896	510,636	1918*	742,247
1871	304,100	1901	486,716	1919*	722,723
1876	366,703	1906	537,762	1920*	662,264
1881	398,577	1911	689,004	1921*	663,178
1886	361,663				

\* At 30th June.

The increase in the number of horses in the State since 1861 has been occasioned mainly by the growth of domestic needs. The fluctuations in the numbers are not very marked, but it is noteworthy that the droughts of 1902 and 1919-20 each caused a reduction in numbers of approximately 10 per cent.

For purposes of classification the horses have been divided into draught and light, and the number of each particular kind, at the 31st December, 1920, so far as could be ascertained from returns collected by the Stock Department, was as follows:—

Class.	Thoroughbred.	Ordinary.	Total.
Draught ... ..	25,112	233,701	258,813
Light ... ..	28,853	245,128	273,981
Total ... ..	53,965	478,829	532,794

New South Wales is specially suited to the breeding of saddle and light-harness stock, and it is doubtful whether, in these particular classes, the Australian horse can be surpassed anywhere. Thoroughbred sires are kept on many of the large holdings, and the progeny of these stallions combine speed with great powers of endurance. The possession of these qualities gives them great value as army remounts.

There is a regular export trade to India, where the horses are required as remounts for the Indian Army; this trade has shown a marked increase since 1914. In the year ended 30th June, 1921, 951 horses, valued at £19,723, were exported to India.

#### OTHER LIVE STOCK.

The number of goats in New South Wales in June, 1921, was 30,785, including 4,517 Angora goats, which are valued by pastoralists chiefly as effective scrub exterminators, although the dry climate of the western districts is eminently suited to the production of fine mohair. Under the provisions of the Dog and Goat Act, 1898, the use of dogs or goats for purposes of draught is prohibited.

Camels are used as carriers on the Western Plains, the number in June, 1921, being 1,273, compared with 1,792 at the close of the year 1913.

Donkeys and mules are not extensively used in New South Wales, the numbers in 1921 being 47 of the former and 182 of the latter. It is claimed that mules have many points of advantage over horses for farm work, especially in areas of limited rainfall—for instance, longer period of utility, smaller cost of maintenance, greater adaptability to untoward conditions of labour, and comparative freedom from disease.

The climate of certain portions of the State is considered specially suitable for ostrich farming, though it is not conducted on an extensive scale. The number of ostriches at the end of June, 1921, was 382, as compared with 662 at the close of the year 1913.

#### PRICES OF LIVE STOCK.

The governing factor in the price of meat is the price paid for live stock at the metropolitan saleyards at Flemington, and that price is itself influenced by the world's market price for meat, hides, skins, etc., and by local climatic conditions.

The following statement shows the variations of the prices of fat stock during the years 1917 to 1921. Details of the monthly prices are published in the Statistical Register.

Stock.	1917.	1918.	1919.	1920.	1921.
Cattle.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Bullocks and Steers—					
Mean of Prime and Good	16 13 0	17 9 6	18 8 0	18 7 0	9 14 0
Cows and Heifers—					
Prime ... ..	15 0 0	15 6 0	17 4 0	20 3 0*	9 9 0*
Calves, Vealers—					
Good ... ..	4 7 6	4 10 0	4 11 3	4 7 6	3 10 6
Sheep.					
Cross-bred—					
Wethers—					
Mean of Prime and Good	1 14 3	1 13 3	1 10 9	1 16 0	0 18 0
Ewes—					
Mean of Prime and Good	1 15 9	1 15 6	1 9 0	1 12 9	0 15 0
Merino—					
Wethers—					
Mean of Prime and Good	1 11 3	1 11 0	1 9 3	1 15 9	0 18 9
Ewes—					
Mean of Prime and Good	1 5 9	1 4 0	1 3 0	1 8 9	0 14 6
Lambs, Woolly—					
Mean of Prime and Good	1 6 3	1 5 3	1 2 0	1 7 3	0 14 0
Pigs.					
Porkers—					
Good ... ..	2 17 6	2 10 6	3 7 3	4 4 0	3 14 3
Baconers—					
Good ... ..	4 6 3	4 3 3	4 17 6	6 18 6	5 7 6

\* Extra Prime and Prime.

Subject to the operation of other factors, the prices of stock in local markets are influenced largely by the nature of the seasons, it being found generally that, during bad seasons, stock are hastened to market and prices are low; but, when the dry weather breaks, efforts to re-stock cause a decrease in yardings, and prices for a time are abnormally high.

In July, 1920, when the drought had ended, a sharp rise occurred in the prices of fat stock, supplies at the saleyards having diminished when graziers began to restock their holdings. The abnormal prices lasted for about three months, then the yardings increased, and the prices fell more rapidly than they had risen. Throughout 1921 prices declined steadily, though sheep tended to become dearer towards the end of the year in response to the more favourable prospects of the wool trade.

The figures in the foregoing table show the mean prices of the grades which are most frequently marketed at the sale yards, and the variations in prices of the various classes were briefly as follows:—

The highest monthly average price in 1921 for extra prime weighty bullocks prevailed in January, when £23 was obtained. In November for the inferior grade £3 16s. only was realised.

The monthly averages of cows ranged from £14 12s. in January to £1 10s. in November. For merino wethers and hoggets £1 8s. 9d. in January was the maximum average, while 10s. 9d. in October was the minimum. Ewes reached the extreme averages in January and May, when prices of £1 7s. 9d. and 8s. respectively were realised.

Crossbred wethers and hoggets attained their maximum average in January at £1 10s. 6d., and their lowest in October at 11s. 3d.

Crossbred ewes ranged from £1 8s. 9d. for the month of January to 7s. 9d. for October. Lambs, suckers and woolly showed a monthly variation between £1 12s. in January and 8s. in November.

#### MEAT TRADE.

The meat trade commenced to assume importance in New South Wales about the year 1900, when an export trade in frozen and chilled meat became possible through the provision of refrigerated space in ocean steamers.

Whereas, in the earlier years, surplus stock frequently found no better outlet than boiling-down works, and were, therefore, of no greater value than that of the hides or skins and tallow produced from them, an attractive oversea market for both frozen and canned meats has been opened. Boiling-down operations practically ceased, and the export trade grew steadily until it benefited from a sudden and strong impetus during the war period.

These developments were not without their effects on the local meat supply, and the opening, the expansion, and the boom of oversea trade, which occurred respectively about 1900, 1911, and from 1914 onwards, caused substantial rises in the local prices of both beef and mutton. In the latter part of 1920, however, as a consequence of a glut of meat in cold storage, values fell in the United Kingdom and a substantial reduction occurred in local meat prices.

#### *Slaughtering.*

The following table shows the stock slaughtered in the various establishments at intervals since 1901. Prior to 1920 the figures relating to the establishments and employees are somewhat in excess of the actual number, as

they include a number of butchers' shops in country districts and the shop hands employed therein.

Year.	Establishments.	Employees.	Stock Slaughtered.					
			Sheep.	Lambs.	Bullocks. †	Cows.	Calves.	Swine.
1901	1,642	4,675	4,372,016	147,117	202,795	113,374	19,654	248,311
1906	1,522	4,391	4,229,407	252,648	237,722	94,955	26,200	281,650
1911	1,287	4,343	6,146,739	400,186	306,773	182,178	59,969	316,331
1916*	1,071	3,722	3,815,477	361,831	187,882	165,134	31,986	219,806
1920*	900	1,892	4,998,387	524,925	326,395	191,033	76,811	280,343
1921*	960	1,342	3,508,008	345,255	300,941	145,610	79,504	238,259

\* Year ended 30th June. † Includes a small number of bulls.

The majority of the stock, except swine, are slaughtered in the metropolitan establishments, though it is considered that many advantages would result if facilities were provided to treat all the stock in the districts where they are depastured. In 1920-21 the sheep and lambs slaughtered in the metropolitan districts numbered 2,131,293, cattle 298,627, and swine 112,797. The corresponding figures for the country establishments, including stock slaughtered on stations and farms, were sheep and lambs 1,719,970, cattle 227,428, and swine 125,262.

The slaughter of live stock for sale as food, either for local consumption or for export, is permitted only in places licensed for the purpose, in accordance with the Cattle Slaughtering Act, 1902. The stock slaughtered in Sydney is sold for the most part at the Flemington saleyards near the city.

The following table shows the number of stock yarded there during the last ten years:—

Year ended 30th June.	Sheep.	Cattle.	Year ended 30th June.	Sheep.	Cattle.
1912	3,648,138	211,705	1917	1,711,246	149,604
1913	2,721,356	265,126	1918	1,756,301	146,630
1914	2,805,207	276,440	1919	2,684,652	178,140
1915	3,381,937	255,876	1920	2,792,879	260,306
1916	2,317,602	158,453	1921	2,255,970	251,065

\* Year ended 31st December.

In country towns licensed slaughter-houses are inspected by a local officer appointed and controlled by the Local Government authorities. In Newcastle public abattoirs were established in 1912 under control of a local board, on similar lines to that already existent in Sydney.

In the metropolitan area stock is slaughtered at the State Abattoirs at Homebush Bay. Animals sold at Flemington are inspected *ante mortem*, and the diseased are destroyed, while "doubtful" beasts are marked for further special attention at the abattoirs. The Inspecting Staff at the State Abattoirs consists of a Chief Inspector, nineteen assistants, and two branders. Inspectors are stationed also at private slaughtering premises throughout the County of Cumberland. The operations of the inspectorial staff are supervised by the veterinary officers of the Metropolitan Meat Industry Board, who pay regular visits to the different establishments.

The particulars of operations at the State Abattoirs, Homebush Bay, during the years ended 30th June, 1920 and 1921, are shown in the following statement:—

Animals.	Year ended 30th June, 1920.			Year ended 30th June, 1921.		
	Slaughtered.	Condemned.		Slaughtered.	Condemned.	
		Number.	Per cent.		Number.	Per cent.
Cattle ... ..	209,649	1,455	0·69	165,381	1,149	0·69
Calves ... ..	65,824	2,012	3·06	70,097	1,476	2·11
Sheep and lambs ...	2,542,348	2,953	0·11	1,407,034	666	0·05
Pigs ... ..	94,595	771	0·81	76,316	630	0·83

Further details relating to the operations of the Metropolitan Meat Industry Board are given in the chapter "Food and Prices," also a comparative review of the retail prices of meat.

The average wholesale prices of the best beef during 1920 ranged from 91s. 1d. per cental in September to 55s. 10d. in May. During 1921 the prices quoted for good trade quality beef, and for the best, ranged from 52s. 4d. in January to 19s. 7d. in November.

The particulars stated above relate to the stock slaughtered for all purposes, and the following statement shows the number of sheep and cattle used for local consumption as fresh meat and those frozen for export or preserved during the last three years:—

Particulars.	1918-19.		1919-20.		1920-21.	
	Sheep and Lambs.	Cattle (including Calves).	Sheep and Lambs.	Cattle (including Calves).	Sheep and Lambs.	Cattle (including Calves).
	No.	No.	No.	No.	No.	No.
Used for local consumption	2,953,683	352,841	3,514,186	475,187	3,293,862	478,140
Exported to other States or boiled down for tallow ...	19,202	4,475	37,561	6,698	22,175	2,834
Frozen or chilled for export	583,695	28,210	1,419,569	49,846	491,198	33,147
Required by meat-preserving establishments ... ..	718,150	51,661	551,996	56,508	44,028	11,934
Total Slaughtered ...	4,274,730	437,187	5,523,312	588,239	3,851,263	526,055

The comparison illustrates the fluctuations experienced in regard to the frozen and preserved meat industries; during the year ended June, 1921, there was a decline of 72 per cent. in the number of animals treated for those purposes.

#### *Meat Export Trade.*

The merino sheep, bred primarily for producing wool, are not suitable for the frozen-meat trade, but it has been found by experience that a great expanse of country is suited to the breeding of large-carcase sheep, and many pastoralists have turned their attention in this direction with a view to securing a greater share in the meat trade of the oversea countries. The expansion of the agricultural industry led to mixed farming ventures among primary producers, and the raising of sheep for the meat markets was combined frequently with wheat-growing. In connection with this matter experiments in cross-breeding are conducted by the Stock Department.

In order to establish a high reputation for meat sent oversea, it is necessary for exporters to exercise the greatest care in preparation and transport.

Stringent regulations have been issued by the Department of Trade and Customs regarding inspection and shipment of meat exported. The work is carried out by the Commonwealth authorities. All stock killed for export are examined in a manner similar to those for local consumption, and carcasses which have been in cold storage are re-examined immediately before shipment. In all the large modern steamers visiting the ports of New South Wales refrigerated space has been provided.

The meat trade is a comparatively recent development, and the number of stock available for export depends mainly upon the season, as in periods of scarcity the local demand absorbs the bulk of the fat stock marketed.

The quantity of frozen meat exported overseas in 1889 amounted to 37,868 cwt., valued at £33,426; two years later it had increased to 105,013 cwt., valued at £101,828; its subsequent development may be seen in the following table. The quantity of preserved meat exported was first recorded in 1887, when 9,701,812 lb., valued at £149,287 were exported; the trade in preserved meat is subject to considerable fluctuation. Ships' stores, amounting annually to several millions of pounds in weight, are not included in the following table:—

Year.	Frozen or Chilled.				Preserved.	
	Beef.	Mutton and Lamb.	Total Weight.	Total Value.	Weight.	Value.
	cwt.	cwt.	cwt.	£	lb.	£
1891	*	*	105,013	101,828	6,509,928	85,629
1893	26,529	559,507	586,036	594,593	14,365,300	187,957
1901	115,050	351,516	466,566	541,525	10,086,940	209,697
1906	32,640	455,165	487,805	579,294	3,121,933	62,307
1911	65,097	535,259	600,356	758,155	20,783,779	401,384
1915-16	7,000	236,099	243,099	562,262	4,087,618	159,711
1917-18	36,464	77,864	114,328	362,846	21,522,696	1,230,083
1918-19	21,363	173,122	194,485	497,784	33,836,189	2,000,846
1919-20	55,460	476,491	531,951	1,341,004	20,687,722	1,305,126
1920-21	110,727	166,039	276,766	937,040	4,479,460	235,801

\* Not available.

There was, prior to the war, an encouraging development in the meat export trade, and the prospects of its establishment on a stable foundation appeared highly favourable. European countries were gradually opening their ports to frozen meat, and the trade in the East was increasing. The war, however, closed many markets and, through inability to secure freight space for commercial purposes, it hampered exports seriously. Early in 1915 arrangements were made in terms of the Meat Supply for Imperial Uses Act, for the purchase by the Imperial Government of all the beef and mutton available for export during the period of the war. Details of the transactions were given in the chapter relating to "Food and Prices" in the 1920 issue of this Year Book.

The Imperial Government ceased to purchase meat in New South Wales in October, 1920, but exports to the United Kingdom by private traders were restricted for some months to enable the stocks already purchased to be shipped overseas; exports to other countries were allowed under permit. Towards the end of 1921, when all control by the Government ceased, the outlook for the trade appeared favourable. Prices of frozen mutton and lamb in London were high and supplies of fat stock in the local saleyards were readily obtainable after a period of scarce supplies, which followed the end of the drought. But the favourable anticipations were not realised, because early in 1921 the London market collapsed. The demand for frozen meat on the Continent had diminished, owing to the poverty of the

nations and the gradual re-establishment of local sources of supply; moreover the irregularity of the rates of exchange hampered the trade. In consequence large cargoes from South America were diverted from Continental ports and landed in Great Britain, where the stores were already congested by supplies of old stocks. In Great Britain, also, economic conditions were not favourable, and when Government control over the prices of imported mutton ceased in March, 1921, the prices dropped very rapidly. There were no sales of Australian mutton between April, 1921, when a small quantity was sold at 8d. per lb., and November. In the interval the price dropped to 4½d. per lb., which is below the cost of placing supplies on the market. Beef prices also experienced a marked decline, and as large quantities of earlier seasons' stocks were available there was no demand for fresh supplies.

Prior to the war New South Wales was supplying nearly 11 per cent. of the imports of frozen mutton in the United Kingdom. After the outbreak of the war the operations of the frozen-meat trade in the United Kingdom became abnormal, as practically the whole trade was taken out of commercial hands and placed under official control. In this way the British Government was able to deal effectively with the shipping and other difficulties affecting the maintenance of supplies. The annual importations into the United Kingdom, subsequent to 1913, were less than formerly, but large quantities of frozen meat were diverted to the continent of Europe and elsewhere for the use of the British forces engaged in the different theatres of the war.

In 1920 an exceptionally large quantity of frozen mutton was exported from Australia, viz., 2,258,084 cwt., of which New South Wales supplied 854,220 cwt. In the following year the total import into the United Kingdom increased by reason of larger shipments from New Zealand and the Argentine Republic, but there was a marked decline in the Australian supplies, which dropped to 417,492 cwt., or less than half the quantity received from New South Wales alone during the previous year.

The movement of the London prices for Australian frozen meat during the last two years in comparison with the pre-war level is shown below. The figures represent the monthly average of the weekly top prices.

Month.	Beef (Hinds).			Mutton.		
	1913.	1920.	1921.	1913.	1920.	1921.
January ...	d.	d.	d.	d.	d.	d.
February ...	3½	13½	11	4½	10½	9
March ...	3½	11½	11½	4	10½	9
April ...	3½	11½	9½	3¾	9¾	9
May ...	3½	11½	6½	4	9	8
June ...	3½	12	5½	3¾	9	8
July ...	3½	12	5½	4	9	*
August ...	4	12	5½	4	9	*
September ...	4	12	5½	4	9	*
October ...	4½	11	5½	4	9	*
November ...	4½	10½	5	4	9	4¾
December ...	4½	11	5	4½	9	4¾
Annual Average	4	11½	6½	4	9½	7½

\* No quotations.

In 1920 the prices as stated for beef in the months January to September and for mutton during the whole year, represent the official maximum prices as fixed by the Government.



The following statement shows the average wholesale prices per pound obtained during the past ten years for Scottish and frozen mutton sold in London.

Year.	Best Scottish.	New Zealand.	Aus- tralian.	River Plate.	Year.	Best Scottish.	New Zealand.	Aus- tralian.	River Plate.
	d.	d.	d.	d.		d.	d.	d.	d.
1912	7 $\frac{3}{8}$	4 $\frac{3}{8}$	3 $\frac{3}{4}$	3 $\frac{7}{8}$	1917	14 $\frac{1}{2}$	8 $\frac{7}{8}$	8 $\frac{7}{8}$	10 $\frac{1}{2}$
1913	7 $\frac{7}{8}$	4 $\frac{3}{4}$	4	4 $\frac{1}{8}$	1918	13 $\frac{3}{8}$	9	9	13 $\frac{1}{2}$
1914	8 $\frac{1}{4}$	5 $\frac{1}{8}$	4 $\frac{1}{2}$	4 $\frac{3}{8}$	1919	14 $\frac{1}{4}$	12	12	12
1915	9 $\frac{3}{8}$	6 $\frac{3}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	1920	19 $\frac{1}{4}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$
1916	12 $\frac{1}{8}$	8 $\frac{1}{4}$	7 $\frac{7}{8}$	9	1921	18	8 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$

The frozen beef imported into the United Kingdom from New South Wales in 1920 amounted to 240,867 cwt., valued at £1,066,213. The value of rabbits imported in the same year was £1,168,373, while preserved meat, including extract and essences, was valued at £804,013.

#### OTHER PASTORAL PRODUCTS AND BY-PRODUCTS.

The minor products accruing from pastoral occupations include skins and hides, tallow, lard and fat, furs, hoofs, horns, bones, bone-dust, glue pieces and hair. Some of these are discussed in the chapter relating to the Manufacturing Industry, and will be given only brief mention here.

The oversea trade in these products is considerable, and though there was a marked decline in the volume of exports of many of the commodities during the war period owing to restrictions arising from war conditions, there was an increase in the total value, as higher prices were obtainable. Early in 1920, however, there was a pronounced drop in prices, and the trade experienced a serious setback. In the following year conditions improved, and the general tendency of prices was upward, though the movement was very irregular.

The following table shows the oversea exports of various pastoral products at intervals since 1901 :—

Products.	Oversea Exports.				
	1901.	1906.	1911.	1915-16.	1920-21.
<b>Skins and Hides—</b>					
Cattle ... .. No.	91,084	72,743	263,306	431,731	219,070
Horse ... .. No.	473	722	1,392	706	140
Rabbit and Hare ... lb.	*	7,380,455	5,795,839	4,352,640	3,387,480
Sheep ... .. No.	*	2,706,027	2,410,543	3,447,212	1,399,388
Other ... .. £	184,522	140,050	296,672	272,622	690,662
Bonedust ... .. cwt.	66,473	56,415	116,733	71,795	59,670
Bones ... .. cwt.	3,207	2,431	6,807	6,963	11,152
Furs (dressed and hatters, not on the skin). ... £	767	180	117	...	46,735
Glue-pieces and Sinews cwt.	12,862	11,003	20,580	13,276	1,135
Glycerine and Lanoline... lb.	*	336,586	138,347	218,673	92,165
Hair (other than human) lb.	165,562	142,636	255,819	336,765	92,271
Hoofs ... .. cwt.	2,215	2,839	3,733	4,518	3,159
Horns ... .. £	12,532	11,979	13,475	3,455	14,548
<b>Lard and Refined Animal</b>					
Fats ... .. lb.	13,633	56,737	227,000	73,461	2,191,819
Leather ... .. £	374,541	411,030	334,996	551,026	524,078
Sausage-casings ... .. £	2,567	17,033	52,562	31,595	99,653
Tallow (unrefined) ... cwt.	305,227	357,031	612,911	128,290	233,891

\* Not available.

The total value of the above-named exports for the various years was as follows:—Year 1901, £1,223,738; year 1906, £1,780,466; year 1911, £2,486,492; year 1915–16, £2,176,838; and year 1920–21, £3,385,838.

The bulk of the export trade in skins and hides is with the United Kingdom and the United States. The exports to the former country in 1920–21 included 1,005,360 sheep skins and 1,264,535 lb. of rabbit skins. The United States received 92,653 cattle hides and 1,843,951 lb. of rabbit skins. Tallow was exported mainly to Japan, 85,514 tons, and to the United Kingdom, 79,520 tons.

#### VALUE OF PASTORAL PRODUCTION.

It is difficult, from the nature of the industry, to estimate the return from pastoral pursuits as at the base of production; but, taking the Sydney prices as a standard, and making due allowance for incidental charges, such as agistment, railway carriage or freight, and commission, the value during the season 1920–21 is estimated to be £20,057,000. The returns received from the different kinds of stock during each year since 1901 are shown in the following table:—

Year.	Annual Value of Pastoral Production (000 omitted).					
	Wool.	Sheep for Food.	Cattle.	Horses.	Total.	Per Head of Population.
	£	£	£	£	£	£ s. d.
1901	8,425	2,071	1,229	722	12,447	9 2 1
1902	7,152	1,446	1,187	851	10,636	7 13 3
1903	8,361	2,327	1,204	790	12,682	9 0 3
1904	9,133	2,206	1,160	727	13,226	9 5 2
1905	12,103	2,753	1,322	764	16,942	11 12 11
1906	13,792	3,514	1,520	885	19,711	13 5 6
1907	16,459	3,222	1,574	1,026	22,281	14 13 7
1908	12,680	3,034	2,032	1,100	18,846	12 3 10
1909	13,128	2,743	1,877	1,292	19,040	12 1 5
1910	14,727	2,704	1,704	1,893	21,028	13 0 3
1911	12,933	2,811	1,689	2,001	19,434	11 13 4
1912	12,497	3,127	1,754	2,062	19,440	11 2 11
1913	13,620	2,885	2,041	2,192	20,738	11 7 11
1914–15	11,250	3,004	2,498	2,096	18,848	10 0 1
1915–16	11,380	4,295	3,729	2,172	21,576	11 7 10
1916–17	16,435	4,616	4,026	1,765	26,842	14 3 5
1917–18	18,091	3,978	4,702	1,664	28,435	14 15 8
1918–19	18,865	4,728	4,633	1,639	29,865	15 3 9
1919–20	18,311	7,450	6,192	2,019	33,972	16 13 5
1920–21	12,744	2,313	2,973	2,027	20,057	9 11 11

The value of the pastoral production depends mainly upon the prices obtainable for wool in the world's markets; but it is, of course, largely determined by the volume of production, which is dependent upon the seasons experienced in the State. The prices of wool rose considerably between 1914 and 1920, so that, while the quantity produced in 1919-20 was 7 per cent. less than in 1914-15, the total value was 62 per cent. higher.

The prices of live stock generally decline in a dry season, as graziers are forced to sell, owing to scarcity of pasturage; but, with an improvement in climatic conditions, the prices generally rise again, owing to the demand for re-stocking. The export prices of frozen meat began to rise steadily in 1911, and advanced at a rapid rate after the outbreak of war, to their highest level in 1918. During 1919 and 1920 there was a steady decline, and in 1921 the London prices, on which the export trade depends, fell below the cost of production and transport to market.

#### NOXIOUS ANIMALS.

The only large carnivorous animals dangerous to stock in Australia are dingoes or so-called native dogs, and foxes; but graminivorous animals, such as kangaroos, wallabies, hares, and rabbits, particularly the last-named, are deemed by the settlers even more noxious. In the latter part of 1920, however, native dogs became an increasing menace to flocks in the Western Division, and added considerably to the difficulties experienced by graziers in that region.

The estimated losses in sheep by native or other dogs and foxes during the year ended 30th June, 1921, were 137,321.

#### *Rabbit Pest.*

Rabbits, which are the greatest pest to the pastoralists, found their way into this State from Victoria; their presence first attracted serious attention in 1881, and they multiplied so rapidly, that, in 1882, they were to be met on most of the holdings having frontages on the Murray River. Attempts to cope with them under the Pastures and Stock Protection Act proved ineffectual, and the Rabbit Nuisance Act was passed, which provided for the compulsory destruction of rabbits by the occupiers of the land, who were to receive a subsidy from a fund raised by an income tax upon stock-owners, but the fund soon proved inadequate, and from the 1st May, 1883, to the 30th June, 1890, when the Act was repealed, it was supplemented by £503,786 from the Consolidated Revenue. The tax upon stockowners yielded £831,457, and landowners and occupiers contributed £207,864, so that the total cost during the whole period exceeded £1,543,000.

The Rabbit Act of 1890 repealed the 1883 Act, and those provisions of the Pastures and Stock Protection Act relating to rabbits. It provided moreover, as occasion required, for the proclamation of land districts as "infested," and for the construction of rabbit-proof fences. From the 1st July, 1890, to the 30th April, 1902, the State expenditure under this Act was £41,620, nearly all of which was devoted to the erection of rabbit-proof netting. From May, 1902, to December, 1903, the expenditure amounted to £10,548.

Under the Pastures Protection Act of 1902 the State was divided into districts, the protection of the pastures being supervised by a board in each district elected by the stockowners. The pastures protection boards were empowered to levy a rate upon the stock, and to erect rabbit-proof fences on any land, to take measures to ensure the destruction of all noxious animals and to pay rewards for such destruction. The State expenditure on rabbit extermination after the establishment of the boards, consisted mainly of

payments to the Railway Commissioners for the maintenance of rabbit-proof fences, and amounted to £13,414 to the end of June, 1918. Since that date no further payments have been made.

In order to prevent the spread of this pest the Government has erected rabbit-proof fences at numerous places. The longest of these traverses the western side of the railway line from Bourke, *via* Blayney and Murrumburrah, to Corowa, in the extreme south of the State, a distance of 612 miles and the Railway Commissioners have undertaken the work of its maintenance. A fence extends from the Murray River northwards, 350 miles along the border between New South Wales and South Australia. On the Queensland border a fence has been erected between Barrington and the river Darling, at Bourke, 84 miles; another, built at the joint expense of the Governments of Queensland and New South Wales, extends from Mungindi to the Namoi River, about 115 miles.

The evil wrought by the rabbit pest is, of course, incapable of measurement, but estimates indicate that the losses due to the pest have been large and considerable expense has been incurred in coping with it. It is contended that the sheep-carrying capacity of the State has been reduced heavily as a consequence of the damage they cause to pastures, and this suggestion is supported by the facts that the number of sheep in the State has declined since their appearance, and every bad season presents the spectacle of heavy losses in sheep through lack of natural fodder. Such losses were not experienced prior to the appearance of rabbits.

Although the damage caused by rabbits is considerable it is compensated to some extent by their local use for food, and their value for export as frozen meat, and skins.

Within the State these animals form a common article of diet, both in the metropolis and in the country, especially during the winter months, when large numbers of men are engaged in their capture and treatment. The consumption is estimated at 60,000 to 80,000 pairs per week. The fur of rabbits and hares is used largely in the manufacture of hats, and of ladies' furs.

The following table shows the exports of frozen rabbits and hares, and of rabbit and hare skins, from New South Wales to countries outside Australia :—

Year.	Exports Oversea.				
	Frozen Rabbits and Hares.		Rabbit and Hare Skins.		Total.
	Quantity.	Value.	Quantity.	Value.	
1901	pairs. *	£ 6,158	lb. *	£ 9,379	£ 15,537
1906	5,938,518	246,803	7,380,455	293,260	540,063
1911	6,806,246	330,741	5,795,839	295,476	626,217
1915-16	9,487,687	607,711	4,352,640	210,935	818,646
1917-18	8,978,377	670,269	6,986,837	1,036,188	1,706,457
1918-19	3,956,877	221,632	10,110,540	1,103,575	1,325,207
1919-20	6,890,636	537,877	9,927,240	2,702,652	3,240,529
1920-21	2,830,315	301,615	3,387,480	609,570	911,185

\* Not available.

The figures show the importance of the export trade in rabbits and hares. There was a considerable rise in the prices obtainable for skins in 1917, and the value of skins exported in 1917-18 was more than three times greater than in 1906, though a smaller quantity was exported. Between 1918 and 1920 the prices of rabbit skins rose to phenomenal heights, and the resultant export of skins made a valuable addition to the export trade of the State. Quotations for all grades of Australian rabbit skins on London market ranged up to 2s. 3d. per pound in July, 1914, but in February, 1920, the range was up to 26s. 3d. per pound. This was the highest level reached, and in May, 1921, the price for the best grade was only 4s. 10d. per pound, and the quantity exported during the year 1920-21 dropped to a figure below normal.

## DAIRYING INDUSTRY.

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THE natural conditions in New South Wales are highly favourable to the development of the dairying industry. The soil and climate in a large portion of the State are suitable for the maintenance of the dairy herds with a minimum of expense and labour, as the animals require neither housing nor hand-feeding during a long winter, as in cold countries, and natural pasture is available throughout the year.

The development of dairying as a national industry is, however, comparatively recent, as its progress was retarded until the introduction of refrigeration enabled producers to overcome disabilities in manufacturing and in distributing the perishable dairy products in a warm climate. The application of machinery to the treatment of milk and the manufacture of butter, the development of the factory system, and improvements in regard to ocean transport have enabled production to expand beyond the limits of local requirements, and butter has become an important item of the export trade.

Where conditions are favourable, sheep are generally more profitable than cattle, so that dairying is conducted mainly in the coastal belt where, with an annual rainfall ranging up to 70 inches, the climate is too moist for sheep or wheat.

In the drier inland divisions, on the other hand, the area devoted to dairying is not extensive, sheep and wheat farming being the main rural industries. In proximity to the centres of population dairy farming is undertaken to supply local wants, and well-equipped factories have been established; dairying is also an important industry on the Murrumbidgee and Hay irrigation areas.

In the coastal division many holdings are used exclusively for dairying; in other parts of the State, where fodder must be grown to carry the stock throughout the winter, the industry is conducted usually in conjunction with wheat-farming and sheep-breeding. Herds of high-class dairy cattle are maintained on many of the large pastoral holdings.

Difficulty in obtaining an adequate supply of farm labour is a drawback to the dairying industry, and has led to the introduction of a system of share-farming, chiefly in the northern coastal divisions. As a general rule, one party supplies the land, stock and implements and the other conducts the farm work. In 1920-21 there were 121,976 acres under this system. 22,227 being in the North Coast division and 69,239 in the Hunter and Manning division.

Most of the native grasses of the State are particularly suitable for dairy cattle, as they possess milk-producing as well as fattening qualities. In the winter the natural herbage is supplemented by fodder, such as maize, barley, oats, rye, lucerne, and the brown variety of sorghum, or the planter's friend. Ensilage also is made for fodder, but not so generally as it should be, and the quantity made in each year varies considerably. The area of land devoted to sown grasses has been extended largely during recent years, and in June, 1921, amounted to 1,816,175 acres; the produce of this land is used mainly as food for dairy cattle.

A Select Committee of the Legislative Council which investigated recently the condition of the dairying industry emphasised the need for a better system of feeding, including conservation of fodder, improving pasturage, and growing crops. Successful dairying depends mainly on the proper

feeding of the cows, and the conservation of fodder as ensilage was recommended for all the dairying districts, especially for those areas where the rainfall is irregular. Another recommendation strongly urged by the Committee was the breeding of dairy stock on the lines of practical utility. It was pointed out that by improved methods of feeding and by culling unprofitable animals an annual average increase of 10 lb. of butter per cow could reasonably be expected, which, after allowing for the cost of herd testing and the increased cost of feeding, would represent a substantial gain to the producers.

#### SUPERVISION OF DAIRY PRODUCTS.

The manufacture, sale and export of dairy products, *i.e.*, milk, condensed milk, butter, cheese and margarine, are subject to supervision in terms of the Dairy Industry Act passed in December, 1915.

Dairy factories and stores must be registered, and are under the supervision of Government inspectors. Cream supplied to a dairy factory must be tested and graded at the factory, and the farmer is paid on the basis of the butter-fat results, or on the amount of butter obtained from his cream. Butter must be graded and packed in boxes bearing registered brands indicating the quality of the product and the factory where it was produced. The testing and grading at the factory may be done only by persons holding certificates of qualification. The Act provides also for the compulsory grading, on a uniform basis, of butter for local consumption and for exportation.

An experienced dairy inspector is appointed in each dairying district and is entrusted with the administration of the Act and regulations thereunder. He acts as inspector and instructs the factory managers and cream graders in matters connected with the industry.

Since the Dairy Industry Act came into force the quality of factory butter has shown a marked improvement, and in the year ended 30th June, 1921, 88 per cent. of the total output was classed as choicest or first-grade, whereas, formerly, only 50 per cent. of the quantity exported reached this standard.

Particulars regarding the supervision of dairies supplying milk for consumption as fresh milk, are shown in the chapter, "Food and Prices."

The supervision of dairy products for the oversea export trade is conducted by officers appointed by the Federal Government, under the Commerce (Trade Descriptions) Act of 1905.

#### DAIRY INSTRUCTION.

Educational and experiment work relating to dairying is conducted by the Department of Agriculture at several of the State experiment farms, and at the Hawkesbury Agricultural College, while stud farms are maintained at Wollongbar and Berry.

The breeds of cattle kept at the various farms are as follows :—At Cowra and at Berry, Shorthorn milking stock; at Wollongbar, Guernseys; at Grafton, Glen Innes and Yanco, Ayrshires; at Wagga Wagga and Bathurst, Jerseys. At the Hawkesbury Agricultural College, Jerseys hold a prominent place, and there are a number of Red Polls.

In order to enable factory managers and butter-makers to improve their scientific knowledge, dairy-science schools are held for short terms at different dairying centres, and certificates are given to those who pass successfully examinations in the grading of cream, and in the testing of milk and cream.

During the year 1920-21 eight dairy science schools were held and 93 students attended.

## HERD-TESTING.

The extension of the practice of herd-testing is of primary importance to the future development of the dairying industry in New South Wales. For many years prior to 1888 the importation of cattle from over-seas was prohibited, and in the period of rapid expansion, which began about 1900, there was a shortage of high-class stock, with the result that many dairy farmers used inferior animals for breeding. The lifting of the embargo and subsequent importations by the Government and by private breeders have given the farmers an opportunity of obtaining a better class of dairy stock, and they are encouraged to improve their herds and to cull all unprofitable animals.

Farmers who supply cream to factories are paid according to the results of the testing and grading of their consignments, but these results, representing averages, do not disclose the necessary records of individual animals. Therefore efforts are being made by the dairy inspectors to organise in each dairying centre a herd-testing association on co-operative lines.

The testing of stud dairy herds is undertaken by the Department of Agriculture. The number of completed tests from the inception of the scheme in 1913, to 1st March, 1922, was 3,318, and there were 738 cows under test at that date. The herd-testing associations had made records of 76,500 cows up to March, 1921; and about 35,000 cows were tested in the following year.

## DAIRY PRODUCTION.

The following figures show the dairy production in each Division of the State during the year ended the 30th June, 1921 :—

Division.	Average No. of Dairy Cows in Milk during year.	Total yield of Milk.	Butter made.	Cheese made.
Coastal—	No.	gallons.	lb.	lb.
North Coast ... ..	235,690	116,876,392	50,217,168	1,237,155
Hunter and Manning ... ..	136,827	46,952,702	15,451,784	857,395
County of Cumberland ... ..	20,875	10,318,627	776,615	9,601
South Coast ... ..	79,184	38,339,817	8,756,467	3,684,725
Total ... ..	442,576	212,487,538	75,202,034	5,788,876
Tableland—				
Northern ... ..	17,335	5,708,187	1,796,958	275,884
Central ... ..	13,032	4,806,842	1,026,862	96,258
Southern ... ..	10,962	4,611,021	1,221,826	11,280
Total ... ..	41,329	15,126,050	4,045,646	383,422
Western Slopes—				
North ... ..	12,835	4,754,616	1,205,765	85,233
Central ... ..	6,664	2,324,634	472,672	250
South ... ..	15,953	6,709,169	1,882,017	47,417
Total ... ..	35,452	13,788,419	3,560,454	132,900
Central Plains—				
North ... ..	1,547	484,762	56,059	...
Central ... ..	4,212	1,449,830	193,294	...
Total ... ..	5,759	1,934,592	249,353	...
Riverina ... ..	15,880	6,518,582	1,188,409	102,011
Western Division ... ..	1,096	347,819	22,145	...
Total, New South Wales...	542,092	250,203,000	84,268,041	6,407,209



This statement illustrates the importance of the dairying activities in the coastal divisions as compared with the remainder of the State. In this area 81 per cent. of the cows are depastured, and about 90 per cent. of the total output of milk, butter, and cheese, is produced. The North Coast Division surpasses any other division, except in regard to cheese-making, of which the bulk is made in the South Coast districts. The Hunter and Manning division is next in importance, then the South Coast. Twenty years ago the last-mentioned division was the principal dairying region, but the industry has since made more rapid progress in the northern districts, where many large estates, used previously for raising cattle for beef, have been subdivided into dairy farms.

#### DAIRY CATTLE.

Particulars of the various breeds of cattle in New South Wales have been shown on page 784. In the dairy herds the Shorthorn preponderates; this breed was introduced into the Illawarra or South Coast districts in the early period of dairying, before the Shorthorn had been developed by English breeders into a beef-producing type. By an admixture with other strains, a useful type of dairy cattle known as the Illawarra has been developed, and an association has been formed to establish the breed. There is also a large number of Jersey cattle, and the popularity of this breed for the production of butter is increasing. The Ayrshire is well represented in the dairy herds; it is noted for hardiness, but is considered as better suited for producing a large quantity of milk for human consumption as fresh milk, than for the purposes of butter-making.

The State Government, as well as private breeders, have imported a number of stud dairy stock for the purpose of improving the local herds. In 1898 the Government imported 24 bulls and 38 cows, including Shorthorns, Guernseys, Jerseys, Ayrshires, Kerry, Red Polls, and Holstein; additional Guernsey cattle were introduced later, viz., 22 cows in 1907, and 10 bulls and 15 cows in 1911. The importations by the State and by private breeders during the last twenty-one years included Jerseys, 28 bulls and 95 cows; Guernseys, 25 bulls and 81 cows; Ayrshires, 25 bulls and 29 cows; and during the last two years Friesians, 7 bulls and 25 cows.

The number of dairy cows in the State in various years since 1901 are shown below :—

As at 30th June.	In Milk.	Dry.	Heifers.		Total.
			Springing.	Other, over one Year.	
	No.	No.	No.	No.	No.
1901†	*	*	*	*	417,835
1906†	494,820	172,888	45,341	*	713,049
1911†	638,525	218,593	37,626	*	894,744
1916	426,227	317,368	92,124	207,999	1,043,718
1917	424,033	319,230	111,369	167,665	1,022,297
1918	429,556	347,834	110,827	177,872	1,066,089
1919	445,354	273,154	78,839	173,101	970,448
1920	419,732	277,888	72,311	133,092	903,023
1921	475,785	282,208	86,381	97,368	941,742

\* Not available. † As at 31st December.

Between 1901 and 1911 the number of dairy cows increased from 418,000 to 895,000, and the number increased rapidly until 1918, when there were 1,066,000 cows, or nearly four times as many as in 1901. In the following

years drought affected the industry, a number of cows were slaughtered for beef, and breeding was restricted, so that in 1920 the number had decreased to 903,000. In 1921 the season was more favourable in the principal dairying districts, and there was an increase of nearly 40,000.

## MILK.

Under normal conditions the milking capabilities of the dairy cows of New South Wales may be estimated at 450 gallons annually per cow.

The average as shown below for each of the last ten years reached this quantity only in 1921, but the number of cows milked includes a very large number, which cannot be classed as dairy cows in the commercial acceptation of the term; they are milked for home supply on farms situated in districts where there are no butter or cheese factories, and their production of milk is much below the yield of an average cow on a dairy farm.

The average annual yield of milk per cow in the dairying districts varies considerably under the influence of the seasons. In the year 1920-21 the average yields were:—North Coast district 496 gallons, Hunter and Manning district 440 gallons, and South Coast district 484 gallons.

Year.	Average Number of Dairy Cows in Milk during Year.	Total Yield of Milk. (000 omitted.)	Average Yield of Milk per Cow.	Year.	Average Number of Dairy Cows in Milk during Year.	Total Yield of Milk. (000 omitted.)	Average Yield of Milk per Cow.
	No.	gallons.	gallons.		No.	gallons.	gallons
1911	638,525*	237,623	372	1917	551,623	226,004	410
1912	620,730*	225,446	363	1918	634,000	247,529	390
1913	600,420*	231,592	386	1919	536,200	207,095	386
1915	513,420	237,930	442	1920	511,064	203,797	399
1916	465,044	184,014	396	1921	542,092	250,203	461

\* Number as at 31st December.

The total yield of milk, as shown above, is not absolutely accurate, but it is the best available estimate. Few, if any, dairy farmers actually measure the yield obtained from their cows, because they are concerned principally in producing cream. A large part of the yield of milk, therefore, is estimated from its cream content.

The yield of milk was lowest in 1916 when, owing to unfavourable weather, it fell to 184,014,000 gallons; in 1917 and 1918 there were substantial increases, then it declined and in two years it did not greatly exceed 200,000,000 gallons. During 1921 it reached the highest figure yet recorded, viz., 250,203,000 gallons. The yield per cow, as shown in the table, was apparently low in the years 1911 to 1913, but the averages are understated, as they were computed on the basis of the number of cows in milk at 31st December, when the number is generally at a maximum for the year. In 1915 a satisfactory average yield of 442 gallons was obtained, but in the following years there was a marked decline; in 1920 there was a slight improvement notwithstanding the bad season. In the following year the climatic conditions were very favourable, and the average rose to 461 gallons.

The following statement shows the purposes for which the milk was used during the years 1915-16 and 1920-21 :—

		1915-6. gallons.	1920-21. gallons.
Used for butter made on farms	...	12,593,000	12,945,000
„ „ in factories	...	127,323,000	178,411,000
		139,916,000	191,356,000
Used for cheese made on farms	...	1,032,000	453,000
„ „ in factories	...	5,216,000	6,196,000
		6,248,000	6,649,000
Used for sweet cream	... ..	342,000	616,000
„ condensing	... ..	1,400,000	4,144,000
Pasteurised for metropolitan market	...	11,617,000	13,126,000
Balance sold or used otherwise	...	24,491,000	34,312,000
Total	... ..	184,014,000	250,203,000

The milk used for making butter represents 76 per cent. of the total production; 3 per cent. was used for cheese; about 2 per cent. for condensed milk; and the balance was consumed as fresh milk or sweet cream.

The quality of the milk as indicated by the percentage of butter fat is even more important than the average yield of milk per cow, and it is satisfactory to note that, in spite of adverse seasons, the quality has been fairly well maintained. The following statement shows the quantity of butter per 100 gallons of milk treated on farms and in factories during each of the last ten years :—

Year.	Quantity of Butter per 100 gallons of Milk treated.		
	On Farms.	In Factories.	On Farms and in Factories.
	lb.	lb.	lb.
1911	33·0	42·9	42·2
1912	33·1	42·4	41·8
1913	33·6	42·5	41·9
1915*	33·8	44·3	43·7
1916*	33·9	43·5	42·6
1917*	34·0	45·2	44·1
1918*	35·2	44·5	43·8
1919*	35·3	44·5	43·8
1920*	34·2	43·5	42·8
1921*	33·9	44·8	44·0

\* Year ended 30th June.

During the period under review the quantity of butter per 100 gallons of milk increased by 1·8 lb.; the average in factories was about 11 lb. higher than in the case of milk treated on farms. Doubtless this is due to improved methods of treatment and to the fact that the farmer is paid for his cream in accordance with the quantity of butter obtained from it.

As already stated the manufacture of butter by machinery and the establishment of factories in dairying centres were important factors in the

development of the industry. When the machinery for separating cream from the milk was first introduced it was the practice for the farmer to take the milk once or twice a day to the factory where the cream was separated by means of power-driven separators, and the separated milk was carried back to the farms for feeding calves and pigs. The difficulty in keeping milk sweet when carried long distances, especially in summer time, led to the establishment of public separating stations or "creameries" for the treatment of milk, the cream only being sent to the factories. In recent years this arrangement has been discontinued and it has become the practice to instal hand or small power separators on each farm. Thus the farmers have been able to effect great economy of time and labour, as the cream need not be taken to the factory at such frequent intervals, while an additional advantage is derived by the supply of freshly separated milk for the farm stock.

#### *Preserved Milk.*

Three kinds of preserved milk are produced in New South Wales, viz., sweetened condensed milk, unsweetened condensed milk, and concentrated milk.

Sweetened condensed milk is manufactured by the evaporation of a certain percentage of water from fresh milk, and by the addition of about 40 per cent. of cane sugar; in this form the preserved milk should keep for an indefinite period. Unsweetened condensed milk is treated at a much higher temperature in order to render it sterile without the aid of sugar. In the manufacture of concentrated milk, the degree of concentration is greater, but the milk is not heated to a sufficiently high temperature to render it sterile, and a small quantity of chemical preservative is added. Concentrated milk is used principally on the ocean-going steamers; it is considered to be more digestible than unsweetened condensed milk.

Since 1913 there has been great progress in the manufacture of preserved milk; in that year there were two factories, employing 42 hands, and the value of land, buildings and plant amounted to £16,300; in the year ended June, 1921, there were four factories, with 169 hands, and the value of land and plant had increased to £57,312.

The increase in the output since 1913 is shown below :—

Year ended 30th June.	Milk treated. (000 omitted.)	Condensed and concentrated milk produced.	
		Quantity.	Value.
	gal.	lb.	£
1913	1,062	3,682,800	52,734
1915	1,601	6,002,600	99,630
1916	1,400	4,918,100	91,700
1917	1,693	5,830,000	125,120
1918	2,366	8,973,900	206,250
1919	3,119	11,267,400	280,130
1920	3,619	12,969,700	383,840
1921	4,144	14,938,100	495,098

The output in 1920-21 consisted of condensed milk, sweetened 13,035,735 lb., unsweetened 355,183 lb., and concentrated milk 1,547,229 lb.

Recently there has been an amalgamation of the companies engaged in the manufacture of these milk products in Australasia.

Details regarding the supply and distribution of fresh milk in the Metropolitan area are shown in the chapter relating to Food and Prices.

## BUTTER.

The following statement shows the quantity of butter made, and the milk used for that purpose, at intervals since 1901. In distinguishing between the milk treated on farms and in factories, the quantity used in farm-factories, whether worked by a separate staff or by farm employees, has been included in the statistics relating to factories.

Year.	On Farms.			In Factories.			Total.		
	Milk used.	Butter made.	Milk used per lb. of butter.	Milk used.	Butter made.	Milk used per lb. of butter.	Milk used.	Butter made.	Milk used per lb. of Butter.
	(000 omitted.) gallons.	lb.	gal.	(000 omitted.) gallons.	lb.	gal.	(000 omitted.) gallons.	lb.	gal.
1901	14,168	4,775	2.97	82,304	34,282	2.40	96,472	39,057	2.47
1906	14,288	4,637	3.08	141,761	54,304	2.61	156,049	58,941	2.65
1911	14,034	4,632	3.03	182,947	78,573	2.33	196,981	83,205	2.37
1913	13,342	4,474	2.98	172,387	73,305	2.35	185,729	77,779	2.39
1915*	11,272	3,805	2.96	181,194	80,329	2.26	192,466	84,134	2.29
1916*	12,593	4,258	2.96	127,323	55,374	2.30	139,916	59,632	2.35
1917*	12,627	4,294	2.94	166,108	75,070	2.21	178,735	79,364	2.25
1918*	12,947	4,580	2.83	170,673	75,888	2.25	183,620	80,468	2.28
1919*	11,461	4,043	2.83	139,347	61,966	2.25	150,808	66,009	2.28
1920*	10,178	3,478	2.93	137,194	59,657	2.30	147,372	63,135	2.33
1921*	12,945	4,388	2.93	178,411	79,880	2.23	191,356	84,268	2.27

\* Year ended 30th June.

The proportion of factory-made butter in the total production has increased from 72 per cent. in 1895 to 95 per cent. during 1920-21, a result of the decrease in the cost of production in factories as compared with farms. On the average nearly 3 gallons of milk were required to make a pound of butter on the farms, as compared with  $2\frac{1}{4}$  gallons in the factories. Nearly all the factories dealing with dairy produce are established on the co-operative system.

The combined effects of drought conditions and scarcity of shipping-space for export trade caused a marked decrease in the butter produced in 1916. In the following year a most successful season was experienced, and the output rose to 79,364,471 lb., or 33 per cent. higher than in 1916. The improvement was maintained in 1918 when the production amounted to 80,468,007 lb. The reduced output in 1919 and 1920 was largely due to drought conditions prevailing in the Coastal districts during the year, but in 1921 the production rose to a level slightly higher than in 1915, previously the highest on record.

Further particulars regarding dairy factories are given in the chapter relating to Manufacturing Industry.

## CHEESE.

Excellent conditions exist in New South Wales for the production of cheese, but cheese-making has not advanced to the same extent as the manufacture of butter, the latter being more profitable.

The industry is retarded by the great disadvantages of cheese as an article of export. It matures quickly, and, unlike butter, cannot be frozen, and

after a certain period it decreases in value. Moreover, cheese represents only half the money value of butter, while the cost of freight is practically the same.

The Select Committee, to which reference was made above, assigns the unsatisfactory condition of this section of the dairying industry to the fact that there is not the legislative power to control adequately the manufacture of cheese, as in the case of butter. It should be made compulsory to grade the milk, and to pasteurise it, also to grade the cheese according to quality.

From a previous table showing the cheese made in the various divisions of the State, it will be seen more than half of the total production during the 1920-21 season was made in the South Coast Division.

The following table shows the production of cheese in factories and on farms at intervals since 1901 :—

Year.	Production of Cheese.		
	In Factories.	On Farms.	Total.
	lb.	lb.	lb.
1901	2,428,599	1,410,236	3,838,835
1906	3,459,641	1,999,004	5,458,645
1911	4,617,387	843,265	5,460,652
1913	4,872,165	1,748,483	6,620,648
1915*	5,314,494	1,042,133	6,356,627
1916*	4,969,374	1,010,262	5,979,636
1917*	6,946,956	883,283	7,830,239
1918*	7,120,770	678,906	7,799,676
1919*	5,500,298	481,822	5,982,120
1920*	6,230,350	532,117	6,762,467
1921*	5,965,715	441,494	6,407,209

\* Year ended 30th June.

During the five years, 1901-06, the production increased from less than 4 million pounds to nearly 5½ millions; it remained at that level until 1913, then it declined in the two succeeding seasons. In 1916-17 purchases by the Imperial Government for the use of troops led to increased production, and the output of 7,830,239 lb. was the highest on record. In 1919 the production declined to the former level, but it was somewhat higher in 1920 and 1921.

#### SWINE.

The breeding of swine is conducted usually on dairy farms, where a large supply of separated milk is available for fattening the stock; pigs are reared also in agricultural districts, where special crops of maize, peas, etc., are grown for them. Pigs increase rapidly, so that there is a danger of an over-supply on the market unless a steady export trade is developed; for this reason pig-raising has not progressed to the same extent as the dairy industry.

The principal breeds of swine are the Berkshire, prized because it is fattened readily; the Poland China, which thrives in the North Coastal districts; the Tamworth, which is useful for crossing with fat breeds to secure a good bacon pig; and a type called the Middle Yorkshire, which has been fixed by crossing the Large and Small Yorkshires. Stock of high-class strains may be purchased at the Government experiment farms and other institutions.

The following table shows the number of pigs in New South Wales at intervals since 1891 :—

Year.	Swine.	Year.	Swine.
	No.		No.
1891	253,189	1917*	359,763
1896	214,581	1918*	396,157
1901	265,730	1919*	294,648
1906	243,370	1920*	253,910
1911	371,093	1921*	306,253
1916*	231,158		

\* As at 30th June, previously as at 31st December.

The figures show remarkable fluctuations, but, since 1901, there has been a tendency to increase; in 1918 the number, 396,157, was the highest on record, but it declined to 253,910 in 1920, owing to adverse seasons. There was a substantial increase in 1921. At 30th June, 1921, the pigs less than one year old included 5,007 boars, 46,198 sows, 55,269 barrows, and 122,717 suckers; and the pigs aged one year and over included 10,869 boars, 49,333 sows, and 16,860 barrows.

The following statement shows the number of pigs in various divisions of the State and the production of bacon and ham at intervals since 1901 :—

Division.	1901.		1911.		1921.*	
	Swine.	Bacon and Ham cured.	Swine.	Bacon and Ham cured.	Swine.	Bacon and Ham cured.
	No.	lb.	No.	lb.	No.	lb.
Coastal ... ..	146,011	8,297,480	255,361	13,845,520	208,903	14,781,094
Tableland ... ..	72,277	1,860,852	45,578	1,124,091	29,700	597,872
Western Slopes ... ..	32,401	681,944	42,258	666,173	39,599	422,712
Remainder of State ... ..	15,041	240,615	27,896	467,043	28,051	455,564
Whole State ... ..	265,730	11,080,891	371,093	16,102,827	306,253	16,257,242

\* Year ended 30th June.

This table shows that the pig-raising and bacon industries have made considerable progress since 1901 in the dairying districts of the coastal division, and 91 per cent. of the total production of bacon in 1920-21 was cured in those districts. In the tableland and western slopes divisions there has been a marked decline, especially in the tableland districts.

#### *Bacon and Hams.*

The number of bacon factories has increased considerably since 1906, but the production of bacon in New South Wales is not usually sufficient for local requirements, and quantities are imported from other States.

The output of bacon and hams from factories and farms at intervals since 1891 is shown hereunder :—

Year.	Production of Bacon and Ham.		
	Factory.	Farm.	Total Production.
	lb.	lb.	lb.
1891	2,120,300	3,889,300	6,009,600
1901	7,392,100	3,688,800	11,080,900
1911	13,393,500	2,709,300	16,102,800
1913	12,874,700	2,317,600	15,192,300
1916*	11,637,900	1,938,700	13,576,600
1917*	13,560,400	2,227,800	15,788,200
1918*	15,602,900	2,952,200	18,555,100
1919*	13,935,700	2,866,000	16,801,700
1920*	14,938,300	1,731,300	16,669,600
1921*	14,625,800	1,631,400	16,257,200

\* Year ended 30th June.

During the first decade of the period under review the production of bacon showed a substantial increase, but during the drought of 1902–03 there was a decline, and the industry did not recover from the effects for some years. During the ten years, 1901 to 1911, the output increased from 11,000,000 lb. to over 16,000,000 lb.; in 1915–16 the production declined again, but in 1918 it rose to 18,555,000 lb., the highest on record; the subsequent seasons were not so favourable.

#### *Lard.*

Statistics showing the total production of lard are not available. During the year ended 30th June, 1921, the quantity extracted in bacon factories amounted to 480,647 lb., valued at £22,399; but as the manufacture of this product is conducted in many other establishments, as well as on farms, this quantity represents only a portion of the total output.

During the twelve months ended 30th June, 1921, the oversea exports of lard and refined animal fats amounted to 2,191,819 lb., valued at £101,621, as compared with the direct imports from oversea countries amounting to 19,679 lb., valued at £907.

#### LOCAL CONSUMPTION OF DAIRY PRODUCTS.

The local consumption of milk and butter in New South Wales is comparatively high; the average consumption per head in 1920–21 was as follows :—Fresh milk 19·6 gallons, preserved milk 5·9 lb., butter 27·8 lb., cheese 3·4 lb., bacon and ham 8·4 lb. With a population of about 2,100,000 the local requirements amount to 41,200,000 gallons of fresh milk per annum, 12,400,000 lb. of preserved milk, 58,400,000 lb. of butter, 7,100,000 lb. of cheese, and 17,600,000 lb. of bacon and ham. Comparison with the figures on the foregoing pages show that the State is self-supporting in regard to milk and butter and that a small proportion of the bacon and cheese supply is imported—generally from the other States of the Commonwealth. During the summer months, when production is at a maximum, a quantity of butter is placed in cold storage in order to ensure an adequate supply during the winter.



## EXPORTS OF DAIRY PRODUCTS.

Dairy products for export beyond the Commonwealth are subject to inspection by Federal Government officials under the provisions of the Commerce Act, 1905, and the exportation of inferior products is prohibited unless the goods are labelled as below standard. Upon the request of the exporters, butter and cheese are graded and certificates as to quality are issued.

The following table shows the oversea exports of dairy products from New South Wales, inclusive of ships' stores, at intervals since 1891. The particulars for 1906 and earlier years relate to New South Wales produce only, but in later years the figures include a small quantity of the produce of other Australian States.

Year.	Oversea Exports.							
	Butter.		Cheese.		Milk—Preserved, Condensed, etc.		Bacon and Ham.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lb. (000)	£	lb. (000)	£	lb. (000)	£	lb. (000)	£
1891	11	478	18	411	...	...	9	380
1896	1,912	75,994	45	821	8	156	40	994
1901	8,700	379,342	174	4,359	196	2,525	96	3,007
1906	23,362	978,725	123	3,268	258	4,906	141	4,996
1911	33,044	1,518,993	127	3,723	1,127	17,471	618	17,561
1913	22,396	1,009,169	131	4,210	1,144	24,176	467	18,117
1916*	4,306	259,834	191	9,767	947	22,040	224	11,279
1920*	7,059	596,414	1,179	76,582	14,078	612,998	1,639	125,849
1921*	28,429	3,458,280	804	49,813	11,576	694,122	1,357	132,075

\* Year ended 30th June.

The decline in the exports in 1915–16 was due to shortage of shipping space; during the next two years large quantities were exported for war purposes. In 1918–19 large shipments of bacon were sent to India, Egypt, and Java. The export trade in butter is almost entirely with the United Kingdom; during the two years ended June, 1920 the quantity available for export was considerably reduced. In 1920–21 it was higher than in any year of the war period, the season was good, and remunerative prices were obtainable in London. The exports of condensed milk increased rapidly during the war period.

The imports of butter, the production of New South Wales, into the United Kingdom during the last ten years are shown hereunder, and the proportion it bears to the total imports of butter.

Year.	Imports of Butter from New South Wales.	Proportion to Total Butter Imported into United Kingdom.	Year.	Imports of Butter from New South Wales.	Proportion to Total Butter Imported into United Kingdom.
	cwt.	per cent.		cwt.	per cent.
1911	281,588	6·54	1916	32,575	1·50
1912	186,695	4·61	1917	169,024	9·36
1913	155,936	3·77	1918	198,751	12·59
1914	122,528	3·08	1919	118,974	7·63
1915	158,222	4·16	1920	74,166	4·36

The freight on butter forwarded from Sydney to London during the 1920-21 season was 6s. per box of 56 lb. The rate has increased considerably since June, 1914, when it ranged from 2s. to 2s. 6d. per box.

In 1917 arrangements were made to form a pool to negotiate the sale of the Australian butter available for export, and the whole of the surplus was purchased by the Imperial Government until 31st March, 1921. After that date the exports were handled by an association of the local distributing firms until October, 1921, when the open market was restored.

The price of Australian butter in London was fixed by Government proclamation in September, 1917, at £10 6s. per cwt., in November of that year the price was raised to £11. In January, 1918, the flat rate of £12 12s. per cwt. was fixed by the Government for all imported butter, and this rate remained constant until January, 1920. The subsequent changes in the price are shown in the following statement of the general average top price for Australian butter of the choicest and first-grade quality :—

Month.	Average Price per Cwt.		Month.	Average Price per Cwt.	
	1920.	1921.		1920.	1921.
	s. d.	s. d.		s. d.	s. d.
January ... ..	256 9	336 0	July... ..	266 0	208 0
February ... ..	270 8	298 8	August ... ..	266 0	244 0
March ... ..	303 4	298 8	September... ..	303 4	222 0
April... ..	303 4	273 0	October ... ..	336 0	188 0
May ... ..	303 4	206 0	November... ..	336 0	170 0
June... ..	303 4	182 6	December ... ..	336 0	150 0

#### POULTRY-FARMING.

Poultry-farming was conducted formerly in conjunction with dairying; but the interests involved have become so important commercially in the past ten years that a distinct industry dealing with poultry alone has been developed. Every effort is made to obtain the benefits of modern methods of poultry-farm management, and to secure the best egg-laying and table breeds. To assist poultry farmers, the Department of Agriculture issues various publications on poultry culture and employs a Poultry Expert, whose advice is always available. Accurate statistics of production are not available, but a general estimate based on accessible returns shows that the value of production during 1920-21 was approximately £3,196,000.

Special attention is devoted to improving the laying qualities of the different breeds, and egg-laying competitions, organised originally by private subscription, have been conducted since 1901 at the Hawkesbury Agricultural College, with the object of stimulating the poultry industry. These competitions have attracted widespread interest, and birds for competition are sent from all parts of New South Wales, from the other Australian States, from New Zealand, and some from America.

By this means much valuable information has been gained from practical experiment and research; tests are arranged and records are kept of the cost of feeding, and of the results obtained from the various breeds of poultry, and by different methods of treatment. The expansion of poultry-raising in recent years has received a great impetus from this source, inasmuch as it produced data, previously unobtainable, as to the possibilities of poultry-farming as a business, and stimulated the idea of breeding for high egg production.

An annual report in bulletin form, giving particulars and tabulated results of these competitions is issued by the Department of Agriculture.

#### BEE-KEEPING.

The bee-keeping industry is at the present time of small importance, though there is ample inducement for further expansion.

The production of honey and of beeswax varies considerably from year to year, as shown in the following table, which relates to the last eleven years.

Season.	Bee Hives.			Honey.	Average Yield of Honey per productive Hive.	Beeswax.
	Productive.	Un-productive.	Total.			
	No.	No.	No.	lb.	lb.	lb.
1910-11	55,958	14,308	70,266	2,765,618	49.4	72,617
1915-16	31,974	5,803	37,777	1,590,384	49.7	29,919
1916-17	33,317	7,454	40,771	1,665,298	50.0	29,434
1917-18	50,668	10,314	60,982	3,875,511	76.4	53,342
1918-19	27,629	16,230	43,859	879,776	31.8	19,231
1919-20	17,534	10,384	27,918	472,340	26.9	12,195
1920-21	28,041	6,387	34,428	1,443,377	51.5	23,320

The low average yields in the early portion of the period under review were attributed to dry conditions and to the use of box-hives. The improvements in the years 1915-16 to 1917-18 synchronised with the extension of the provisions of the Apiaries Act, and the yield per productive hive during 1917-18, 76.4 lb., constituted a record and was 56 per cent. above the experience of the previous ten years. The years 1918-19 and 1919-20 were disastrous for the bee-keeping industry, owing to prolonged dry weather and absence of flowers. There was high mortality amongst the bees, the total number of hives decreasing in these two years by 54 per cent., and bee-keeping as an industry was in a worse position than at any time during the previous ten years. The production in 1919 and 1920 was the lowest in the period under review, and the decrease in the number of productive hives, as compared with the previous year, represents 66 per cent. A more favourable season was experienced in 1921, and the yield of honey was three times the quantity produced in the preceding year, and the average yield per hive was almost twice as high, though it was nearly 33 per cent. below the record of 1917-18.

Frame hives are now in general use, as the box-hive has been condemned. Special legislation which has been passed with reference to apiculture is more fully detailed in the chapter relating to Agriculture, in earlier issues of this Year Book.

The estimated value of the production in 1920-21 of honey was £48,112, and of beeswax £2,332, the production for each division being as follows:—

Division.	Honey.	Beeswax.
	lb.	lb.
Coastal ... ..	458,761	10,201
Tableland ... ..	637,566	8,239
Western Slopes ... ..	302,633	4,113
Central Plains and Riverina ...	42,067	738
Western Division ... ..	2,350	29
Total ... ..	1,443,377	23,320

#### VALUE OF DAIRY AND FARMYARD PRODUCTION.

It is evident from the foregoing that the dairying and farmyard industries are important factors in the rural production of New South Wales. The value of production in 1920-21 amounted to £16,447,000, or £7 17s. 5d. per head of population; the dairying industry yielded £12,071,000, swine £1,130,000, poultry £3,196,000, and bees £50,000. The value of production in each year since 1911 has been as follows:—

Year.	Butter.	Cheese.	Milk (not used for Butter or Cheese).	Milch Cows.	Swine.	Poultry and Eggs.	Bees.	Total.
	(000) £	(000) £	(000) £	(000) £	(000) £	(000) £	(000) £	(000) £
1911	3,631	129	619	389	447	1,280	39	6,534
1912	3,895	168	750	406	539	1,401	33	7,192
1913	3,450	170	950	385	500	1,578	30	7,063
1914-15	4,038	170	962	523	538	1,597	18	7,846
1915-16	3,198	167	1,084	419	605	2,144	32	7,649
1916-17	4,740	227	1,059	657	795	1,908	33	9,419
1917-18	4,954	250	1,618	668	990	2,082	73	10,635
1918-19	4,537	204	1,949	709	1,153	2,501	20	11,073
1919-20	4,712	278	2,132	721	1,121	2,814	15	11,793
1920-21	8,411	306	2,751	603	1,130	3,196	50	16,447

The value of production from these industries increased during the period under review from £6,534,000 to £16,447,000, and the increase was fairly steady throughout the period. The bulk of these commodities is produced for home consumption, and prices rise and fall in accordance with local seasonal conditions. For this reason the annual value of production does not reflect a decreased yield in adverse seasons to the same extent as agricultural and pastoral products produced for the oversea market.

Butter is the principal item of dairy produce; the value of the butter produced in 1920-21 was £8,411,000 as compared with £3,631,000 in 1911.

The return from poultry farming, which is next in importance, has increased considerably during the last three years; the production from the industry is somewhat understated, because records are not obtainable of the production on areas of less than one acre.

#### WHOLESALE PRICES.

The average wholesale prices obtained during the last six years in the Sydney markets for the principal kinds of dairy and poultry farm produce are shown in the following table. The average quoted for the year represents the mean of the prices ruling each month, and does not take into account the quantity sold during the month.

Dairy and Poultry Farm Produce.	1914.	1916.	1917.	1918.	1919.	1920.	1921.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Milk ... gal	0 0 11 $\frac{3}{4}$	0 1 2	0 1 2 $\frac{1}{2}$	0 1 2 $\frac{3}{4}$	0 1 6 $\frac{1}{2}$	0 1 9	0 1 8 $\frac{3}{4}$
Butter ... lb.	0 0 11 $\frac{1}{2}$	0 1 3	0 1 4 $\frac{1}{4}$	0 1 4 $\frac{1}{2}$	0 1 7 $\frac{1}{4}$	0 2 1	0 1 9 $\frac{1}{2}$
Cheese ... "	0 0 7 $\frac{1}{2}$	0 0 9 $\frac{1}{2}$	0 0 9 $\frac{3}{4}$	0 0 10	0 1 0 $\frac{3}{4}$	0 1 3 $\frac{1}{4}$	0 1 0 $\frac{3}{4}$
Bacon ... "	0 0 9 $\frac{3}{4}$	0 0 11 $\frac{1}{2}$	0 0 11 $\frac{1}{2}$	0 1 0	0 1 1 $\frac{1}{4}$	0 1 6	0 1 4 $\frac{3}{4}$
Eggs ... doz.	0 1 1	0 1 3	0 1 0	0 1 2	0 1 9 $\frac{1}{2}$	0 1 11	0 1 10 $\frac{1}{4}$
Poultry—							
Fowls							
(Roosters)pr.	0 5 5	0 5 9	0 5 9	0 5 9	0 7 0	0 7 9	0 9 5
Ducks							
(English) ..	0 4 5	0 4 11	0 4 9	0 4 9	0 5 10	0 7 4	0 8 11
Geese ..	0 6 8	0 8 0	0 9 9	0 9 9	0 10 5	0 11 9	0 14 10
Turkeys							
(Cocks) ..	0 11 2	0 14 3	0 15 6	0 17 6	1 5 8	1 15 8	1 17 11
Bee produce—							
Honey lb.	0 0 3 $\frac{3}{4}$	0 0 4 $\frac{3}{4}$	0 0 4 $\frac{1}{2}$	0 0 4 $\frac{1}{2}$	0 0 6 $\frac{1}{2}$	0 0 8	0 0 5 $\frac{3}{4}$
Wax ..	0 1 2 $\frac{1}{2}$	0 1 4 $\frac{1}{2}$	0 1 6 $\frac{1}{4}$	0 1 10 $\frac{1}{4}$	0 2 0	0 2 0 $\frac{1}{2}$	0 1 11

Almost without exception prices increased in each year from 1914 to 1920, the greatest rises occurring in 1919 and 1920. In 1921 all the prices, except the quotations for poultry, were slightly lower than in the preceding year. In 1921 butter was 87 per cent. dearer than in 1914, bacon 72 per cent., eggs 71 per cent., and milk 77 per cent. dearer.

## FORESTRY.

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THE forest lands of the State containing timber of commercial value consist of about 11 million acres, of which about 8 million acres are Crown lands. Nearly 7 million acres of State lands have been either dedicated or reserved for the preservation and growth of timber.

The total forest area, although not large, contains a great variety of useful timbers, which in hardwoods number about twenty different kinds of good commercial value, including such renowned constructional woods as iron-bark, tallow-wood, and turpentine, whilst in other timbers there are about twenty-five varieties, including such valuable timbers as cedar, beech, pine, and teak. It is estimated that, approximately, five-sixths of the timber supply consists of mixed hardwoods and one-sixth of soft and brush woods.

Following the report of a Royal Commission appointed in 1907, a Forestry Department was established under the Forestry Act, 1909. This Act was repealed by the Forestry Act, 1916, which became law on the 1st November, 1916, and provided for the constitution of a Forestry Commission, consisting of three members, one being Chief Commissioner.

The Commission is charged with the administration of the Forestry Act, 1916, which provides for the control and management of the State forests and timber reserves, for the training of forest officers, for the conduct of research work, and for the collection of statistics in connection with forestry.

The Commission may dispose of timber and products of any State forest or timber reserve, and—

- (a) take and sell such timber and products;
- (b) convert any such timber into logs, sawn timber, or any other merchantable article, and sell the same;
- (c) convert any such products into merchantable articles, and sell the same;
- (d) construct roads, railways, and tram-lines and other works for the transport of timber; and purchase, rent, or charter and use vehicles and vessels, with the necessary motive power;
- (e) construct, purchase, or rent sawmills and other mills, with all the necessary machinery and plant for converting timber, and manufacturing articles from timber, and use such mills for those purposes.

One-half of the gross amount received from royalties, licenses, and permits, and from the sale of timber, other than the output of the mills as indicated in (e) above, is to be set apart for afforestation, reafforestation, survey and improvement of State forests and timber reserves, and for pur-

poses incidental thereto, except that the expenditure of an amount exceeding £5,000 on any particular work is subject to the approval of the Minister.

The Government may purchase, resume, or appropriate land for the purpose of a State forest, and may dedicate Crown lands as State forests or timber reserves.

Timber-getters' and other licenses may be issued by the Commission, and exclusive rights to take timber products from specified areas of State forest or timber reserves may also be granted.

Every person conducting a sawmill for the treatment of timber must obtain a license, keep books and records, and make prescribed returns. Royalty must be paid on all timber felled and on all products taken from any State forest, timber reserve, Crown lands, or lands held under any tenure from the Crown which require the payment of royalty; but such royalty is not payable on timber exempted by terms of the license or by the regulations, or on timber required for use on any holding not comprised within a timber or forest reserve; allowance may be made also for any timber which is not marketable. Trees on any State forest, timber reserve, or Crown lands, with the exception of lands held under conditional lease granted before the passing of the Act, must not be ringbarked except under permit.

The Act provides for regulations on the following matters:—Licenses, etc., and the fees and royalties payable; the periods and the conditions under which licenses, etc., may be granted; the protection and preservation of timber; the inspection, cutting, marking, and removal of timber; the kinds, sizes, and quantities which may be cut or removed; the conditions under which fires may be lighted in State forests; and the organisation of a system of education in scientific forestry.

The Act provides also for the classification of forest lands and for proclamation of State forests; and survey work is in progress for this purpose.

"The Australian Forestry Journal" is issued monthly by the Commission with the object of interesting the public in forestry, and it is distributed gratis among a large number of public bodies.

As an aid to forest management a Training School in Forestry was opened at Narara in March, 1920, under the instruction of a Bachelor of Science in Forestry, and seven students entered for the course. This school serves the purpose of training men for the service of the State, but the question of establishing a National School of Forestry for the training of officers for all Australian services is under consideration.

A large amount of regenerative work has been done in connection with the Murray River and the inland forests. Experimental works have been started in various parts of the coast and highlands to test the capacity of different classes of hardwood forest for reafforestation, and to ascertain the best methods of treatment; and stations have been selected for the promotion of afforestation by the establishment of State nurseries, with the object of utilising some of the waste lands of the State, of which about 300,000 acres are suitable for the purpose.

On 30th June, 1921, the total area of Crown lands proclaimed as State Forests was 5,194,298 acres, and the area of timber reserves was 1,535,679 acres.

Particulars relating to the State forests and plantations and timber reserves as at the end of each of the last five years are shown below :—

Particulars.	1917.	1918.	1919.	1920.	1921.
State Forests—					
Number ... ..	491	660	693	706	721
• Area ... acres	3,484,378	4,822,627	5,043,800	5,085,050	5,194,298
State Plantations—					
Area ... acres	449	644	1,052	1,448	2,544
Timber Reserves—					
Number ... ..	829	670	495	530	504
Area ... acres	3,117,579	2,216,447	1,846,927	1,746,069	1,535,679

The area of the timber reserves is being reduced rapidly, as arrangements are made to dedicate suitable reserves as State forests, in order that they may be reserved permanently for forestry purposes, while those reserves which are not adapted for forestry are made available for other uses.

#### *State Forest Nurseries and Plantations.*

A State Forest Nursery is maintained at Gosford for the propagation of plants of commercial types. The planted area is about 42 acres; exchanges of seeds and plants are made with similar institutions in various parts of the world. Branch Nurseries of various dimensions have been established in practically every forestry district in the State, and the total area of effective plantations at the end of June, 1921, was about 2,500 acres. Large areas have been cleared and prepared for planting, and will be utilised when a suitable opportunity presents itself.

To supplement the supply of softwood in the State, afforestation is undertaken on an extensive scale, and, with existing planting schemes, an area of 100,000 acres is involved. Preliminary surveys in the southern highlands disclose an area of 150,000 acres suitable for the growth of softwoods and indigenous hardwood, and as this land is used only for summer grazing at present there is a possibility of extension in afforestation.

#### *Production and Consumption of Timber.*

During the year ended 30th June, 1921, there were 496 licensed sawmills. The employees numbered 5,645, and the value of plant and machinery was estimated at £908,192. The output of native timber amounted to 156,112,000 superficial feet, valued at the mills at £2,047,470.

In the forests which have been placed under intensive management the Forestry Commission undertakes the conversion of all classes of forest produce in order to ensure that all saleable timber will be removed promptly from each area to make way for young growth. In these areas 13,324,000 superficial feet of timber were dealt with during 1920-21.

The following table shows the average annual output of native timber from sawmills in New South Wales in successive years since 1915, and for com-



parative purposes the gross consumption of native and imported timbers is shown for the past five years, as estimated by the Forestry Commission.

Year ended 30th June.	Annual Output of Native Timber from Saw Mills. (000 omitted.)	Estimated Gross Consumption of Timber.	
		Native. (000 omitted.)	Imported. (000 omitted.)
	super feet.	super feet.	super feet.
1915	140,940	*	*
1916	115,201	*	*
1917	125,243	261,000	125,976
1918	126,745	285,925	92,628
1919	131,617	291,225	86,687
1920	155,114	318,040	86,637
1921	156,112	352,882	96,666

\* Not available.

The output of native timber from local sawmills increased rapidly in the years preceding the war, but owing to the disorganisation of shipping and of all business enterprise, the export trade declined and production decreased.

*Value of Production from Forestry.*

The estimated value of production from Forestry in 1920-21 was £1,656,000, as at the place of production. The following table shows the value of Forestry production in New South Wales since the year 1901 :—

Year.	Value. (000 omitted.)	Year.	Value. (000 omitted.)
	£		£
1901	554	1911	998
1902	513	1912	1,083
1903	594	1913	1,130
1904	722	1915*	1,070
1905	833	1916*	1,045
1906	1,008	1917*	1,094
1907	1,017	1918*	1,093
1908	990	1919*	1,306
1909	899	1920*	1,527
1910	906	1921*	1,656

\* Year ended 30th June.

*Imports and Exports of Timber.*

The greater part of the softwood used in New South Wales has been drawn for many years from foreign sources of supply, among which New Zealand, the United States of America, and the countries bordering the Baltic Sea are most important. It is hoped, however, that the steps now being taken by the Forestry Commission to plant extensive areas with high-class American and other soft-woods will ultimately render the State independent of imported timbers.

In the following table particulars are shown regarding the import and export of timber to and from New South Wales at intervals since 1901. A rapid increase in imports proceeded until the outbreak of war, indicating that a growing demand existed locally for soft-woods. Though the forests of the State abound in high-class hard-woods, it is not probable that the export trade will ever assume important proportions.

Year.	Imports.				Exports.—Australian Produce.			
	Undressed.		Other.	Total Value.	Undressed.		Other.	Total Value.
	Quantity.	Value.			Quantity.	Value.		
	sup. feet.	£	£	£	sup. feet.	£	£	£
1901	68,369,135	322,642	137,123	459,765	10,385,618	66,346	58,664	125,010
1906	84,771,918	444,563	81,850	526,413	29,321,865	325,805	9,361	335,166
1911	164,379,875	955,344	209,028	1,164,372	28,397,961	250,990	17,949	268,939
1915-16	119,232,376	814,102	74,305	888,407	15,098,981	144,486	10,965	155,451
1917-18	93,936,763	815,700	39,245	854,945	11,292,281	167,364	7,897	175,261
1918-19	83,187,747	1,089,288	56,580	1,145,868	8,613,784	126,135	9,820	135,955
1919-20	85,975,377	1,442,511	60,245	1,502,756	9,964,984	168,828	25,520	194,348
1920-21	93,303,145	1,904,064	174,910	2,078,974	23,202,315	447,653	17,072	464,725

Included in the value of other timber imported and exported during the year 1920-21 are such items as staves, laths, shingles, spokes, etc., which are not sold in superficial feet. The total value of these items amounted to £41,642 imports and £1,559 exports.

*Forestry Licenses and Permits.*

Licenses and permits are granted at nominal sums for the purposes of obtaining timber and fuel, grazing, sawmilling, ringbarking, and for the occupation of land. Considerable revenue, however, is gained from royalties on timber, agistment, and occupation fees, etc., which are chargeable in addition to the license and permit fees abovementioned.

The revenue collected by the State from timber licenses and from royalty on timber during each year since 1910 is given in the following table :—

Year.	Rents, Timber Licenses, etc.	Royalty on Timber.	Total.	Year.	Rents, Timber Licenses, etc.	Royalty on Timber.	Tot
	£	£	£		£	£	£
1910	10,877	70,960	81,837	1916†	8,701	59,406	68,107
1911	11,153	79,165	90,318	1917†	9,136	58,137	67,273
1912	10,998	85,967	96,965	1918†	12,938	58,031	70,969
1913	12,251	85,362	97,613	1919†	26,705	70,887	97,592
1914*	6,593	39,531	46,124	1920†	52,001	95,040	147,041
1915†	11,365	76,021	87,386	1921†	76,141	114,601	190,742

\* Six months ended 30th June.

† Year ended 30th June.

The practice of forestry in Europe and America has shown that greater expenditure by the Government means greatly increased profits, and there is reason for expecting increased revenue as the result of forest improvement in New South Wales, where timber grows more rapidly and to larger size.

## FISHERIES.

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THE waters along the coast of New South Wales contain numerous varieties of fish, but the fishing industry is being but slowly developed. The principal sources of the supply of marine fish are the coastal lakes and estuaries, the sea beaches and ocean waters, while Murray cod is obtained in the inland rivers. Fishermen generally confine their attention to the coastal lakes and estuaries.

The most extensive development may be expected in the ocean waters, where large shoals of deep-sea fish such as great tunnies, Spanish mackerel, bonito, mackerel, kingfish, tailer, salmon, and many other pelagic fishes travel in large shoals. There are also immense quantities of pilchards, sprats, and other "herring-kind," as well as sea garfish and others.

Crayfishing and the oyster industry also are capable of great development, and mussels could be farmed successfully in a way somewhat similar to oysters, and in many places where the oyster will not flourish. The expansion of the oyster industry depends to a certain extent upon a diffusion of the knowledge of successful oyster culture among oyster growers. Intense cultivation at Port Stephens has produced excellent results in recent years.

Whaling operations have been conducted intermittently, but it is considered that two shore stations with two steam whaling gunboats each could be maintained profitably on the coast of the State. The season begins in June and ends in November, though whales may be taken before and after that period.

### CONTROL OF THE FISHERIES.

Under the Fisheries Act, 1902, control of the fisheries of the State, previously administered by a Commission, was placed in the hands of a Board to supervise the industry, to carry out investigations likely to be of service, and to ensure observance of the regulations in regard to the dimensions of nets, closure of inland and tidal waters, net-fishing, and other such matters. Under an amending Act, in 1910, the Fisheries Board was dissolved and its powers vested in a Minister of the Crown, the Chief Secretary being charged with the administration of the Act.

#### *Fishing Licenses.*

Persons catching fish for sale in tidal or inland waters must be licensed, also boats used for this purpose, the annual fee being 5s., which is reduced to half that amount if the license is issued after 30th June and before 1st December.

The number of licenses granted to fishermen during the year 1921 was 3,524, and licenses were issued in respect of 1,868 fishing boats; the fees received amounted to £1,463.

#### *Oyster Leases.*

For the purposes of oyster-culture, tidal Crown lands below an approximate high-water mark may be leased at yearly rentals, determined by the Minister; the areas are classified as average, special, or inferior lands.

The leases of average lands are for fifteen years, but may be renewed for a like period; no area upon which an aggregate rental of less than £5 per annum is payable, may be leased to any person not already an oyster lessee.

Leases of special lands are granted for areas of special value after the land has been offered by auction or tender, and are subject to the same conditions as leases of average lands, but need not be confined to areas along the approximate high-water mark.

Leases of inferior lands are granted for a term not exceeding ten years, with the right of renewal for a further term of five years.

During the year 1921 applications for leases numbered 405, representing 104,596 yards of foreshore and 314 acres of off-shore leases; at the end of the year the existing leases numbered 3,870; the length of foreshores held was 1,090,350 yards; and there were deep-water leases to the extent of 1,283 acres. The deposits paid with the applications for leased areas were £1,012, while the rentals received during the year for leased areas were £7,834.

#### PRODUCTION FROM FISHERIES.

The most important kinds of fish marketed are snapper, bream, black-fish, whiting, mullet, jewfish, flathead, garfish, and Murray cod—a fresh-water fish; salmon, tailer, trevally, leather-jacket, gurnard, and others are gradually gaining favour in the local markets.

*Fish.*—Exclusive of fish marketed by the State Trawling Industry, the quantity consigned to Sydney and Newcastle markets during 1921 amounted to 179,008 baskets, of which 2,475 baskets were condemned. In addition 5,052 baskets of fish were consigned from the Tweed River to Brisbane, and 376 from Pambula to Melbourne, and 16,000 baskets are recorded as having been sold in various fishing centres in coastal areas, but these figures are incomplete. A basket of fish weighs approximately 84 lb.

As usual the bulk of the supplies came from the estuaries and lakes on the northern part of the coast-line. A small proportion, chiefly snapper, came from the ocean, this being obtained principally by long-line fishing. The main sources of the fresh fish supply during 1921 are indicated below:—

Baskets.				Baskets.			
Clarence River	...	...	41,059	Lake Illawarra	...	...	8,413
Wallis Lake	...	...	13,005	Manning River	...	...	8,239
Port Stephens	...	...	12,942	Hawkesbury River	...	...	8,079
Lake Macquarie	...	...	10,719	Macleay River	...	...	6,068
Camden Haven	...	...	9,068	Hastings River	...	...	5,893
Botany Bay	...	...	8,828	Richmond River	...	...	5,555
Tuggerah Lakes	...	...	8,598				

Notwithstanding the immense shipping development and consequent increase of traffic, and the large reclamation of foreshores in recent years, it is of special interest to note that the marketed production from Port Jackson was as much as 2,141 baskets. The actual production was very much greater, because a considerable quantity was sold in the suburbs of Sydney without passing through the markets.

The total production of fish, as recorded during 1921, was about 22,000,000 lb.

*Crayfish.*—The number of marine crayfish (*Palinurus*) marketed during 1921 was 72,996; the number captured was very much greater, but many

were lost by death before marketing, and 648 were condemned. The principal source of supply was the northern crayfish grounds, from Newcastle to Port Macquarie. From Port Stephens alone over 20,256 were marketed.

*Prawns*.—A quantity of 5,651 baskets, or, approximately, 474,700 lb. of marine prawns (*Penæus*) was marketed during 1921; about 98 baskets were condemned. These figures do not include prawns sold for bait.

*Crabs*.—About 654 baskets of crabs were marketed. These comprised several species of swimming-crabs, notably the Blue (*Lupa*) and the Mangrove (*Scylla*).

*Oysters*.—During the year 1921 the oyster production of the State amounted to 21,628 sacks of the Rock Oyster (*Ostrea cucullata*). This output was principally the result of artificial cultivation.

#### Value of Production.

The value of the production from fisheries of New South Wales, as recorded during the year ended 30th June, 1921, was approximately £490,693, made up as follows:—

Fresh Fish—					£
State Trawling Industry, 5,585,160 lb. ... ..					104,722
Other ... .. 197,961 baskets ... ..					296,942
Crayfish ... ..	6,029	dozen	...	...	12,058
Prawns... ..	5,553	baskets	...	...	11,106
Crabs ... ..	654	baskets	...	...	981
Oysters ... ..	21,628	sacks	...	...	64,884
Total Value ... ..					£490,693

This amount, £490,693, is exclusive of the value of fish condemned, or sold in fishing and other centres and not recorded, or used for fertiliser and oil, the value of molluscs other than oysters, and of the products of whale and dolphin fisheries.

The value of fish, fresh and preserved, imported into the State of New South Wales during 1921 was £323,941; as against this the value of exports was £57,003, comprising re-exports (tinned, potted, etc.) and fresh and smoked fish for ships' stores.

The following table shows the value of production from fisheries since the year 1911:—

Year.	Value. (000 omitted).	Year.	Value. (000 omitted).
1911	£ 197	1917*	£ 303
1912	220	1918*	307
1913	270	1919*	335
1915*	237	1920*	470
1916*	325	1921*	491

\* Year ended 30th June.

## THE STATE TRAWLING INDUSTRY.

The State Trawling Industry is carried on independently of the other fisheries of the State, as it is essentially a commercial project.

This undertaking was established in 1915 with the object of improving the conditions of the fishing industry by augmenting the supply and by affording facilities for speedy distribution to the consumers. Fishing operations are conducted with seven steel steam trawlers, which use the full-sized commercial otter trawl net. Trawling has been confined principally to grounds off Botany Heads, a few miles south of Port Jackson, and in the vicinity of Eden and Green Cape, while some fishing has been done between Sydney and Newcastle, and in the waters off the North Coast. The catches are landed at a central receiving depot at Woolloomooloo Bay, where there are cold storage facilities, and vessels trawling in the Northern waters may discharge at a distributing depôt in Newcastle.

The bulk of the fish handled is distributed by means of retail shops, of which thirteen have been opened in the Metropolitan area, one in Newcastle, and five in country towns. In addition, arrangements have been made with the councils of seventy country municipalities to receive and market fish on account of the State Trawling Industry. The principal varieties of trawled fish are flathead, gurnard, leatherjacket, skate, barracouta, sawfish, snapper, and John Dory.

## FISH PRESERVING.

The fishes especially suitable for treatment, by canning, smoking, or salting, include pilchard, sandy sprat, anchovy, tailer, samson fish, cow-nyung, kingfish, trevally, mackerel, bonito, little tunny, southern tunny, and Spanish mackerel. Canneries have been established at various times in New South Wales, but the irregularity of supplies under present conditions, together with certain climatic disadvantages, militated against their success.

## FISH CULTURE AND ACCLIMATISATION.

Acclimatisation of non-indigenous fishes, particularly trout, has met with success in New South Wales. Californian rainbow trout have been introduced in all suitable streams. Trout fishing now constitutes an important attraction for tourists and sportsmen in the districts watered by the Murrumbidgee and Snowy Rivers and their tributaries, and in the New England and Western mountain districts. A trout hatchery is maintained at Prospect, and considerable numbers of young fry are distributed annually.

## RURAL SETTLEMENT

### *Spread of Settlement.*

Rural settlement in New South Wales proceeded very slowly during the forty years which succeeded the foundation of the colony. The spread of settlement was at first confined to accessible coastal lands with Sydney as centre, and it was not until 1813 that a way was found across the Great Dividing Range to the fertile plains of the west. But even after that discovery population was not sufficient for some years to promote a rapid spread of settlement despite the growing flocks of sheep which demanded new pastures. Even by 1830 the area settled did not extend more than 200 miles in any direction. The steady infiltration of population after 1815 severely taxed the capacity of this region to supply a ready livelihood, and the arrival of assisted immigrants in increasing numbers after 1828 led certain bold and lawless spirits to occupy extensive lands with their sheep beyond the arbitrary legal boundaries, in defiance of authority. This practice was termed "squatting."

Such occupation was illegal for another reason, namely, that until 1831 land could be obtained only by grant from the Governor on special conditions. Unsuccessful attempts were made to dispossess the "squatters" and, in 1832, their right to remain was recognised, and grazing leases were granted at fixed rentals. At the same time an Imperial Act of 1831 provided for the sale of Crown lands in the colony at a fixed price of 5s. per acre and a nominal quit-rent. Thus the way was cleared for rural settlement. The rapid flow of immigrants continued, and a boom in settlement, with the attendant evils of land traffic, resulted. This boom did not end until the price of Crown land was raised to 12s. per acre in 1839, and further to 20s. per acre in 1842 (where it remained until 1895) and the system of free grants was terminated. By that year nearly 6,000,000 acres of alienated land were occupied, besides extensive grazing leases.

The system of selling land was replaced by that of leasing, and a more rapid spread of settlement was begun. Under this system the State was divided arbitrarily into three districts—settled, intermediate, and unsettled—which remained until 1884. Leases were granted upon tender for areas of 25 square miles in the intermediate districts and 50 square miles in the unsettled districts. The grant in the intermediate districts carried the right to purchase 1 square mile in every 25 leased. Under this system, practically the whole of the State was speedily occupied in extensive runs, for the possession of which competition, not without malpractices, was very keen.

Despite the steady flow of immigration the population numbered only 178,668 in 1851, when the gold rushes commenced, bringing a remarkable flow of population. By 1861 the gold fever had subsided, and the number of inhabitants of the State had increased to 357,978. Men now began to seek anxiously for land on which to settle, and found it occupied in extensive runs held on lease and available for purchase, by the holders only, in limited areas. The remedy applied by Parliament was expressed in the famous principle "free selection before survey," introduced in 1861. Very grave abuses arose in the bitter conflict which resulted between the competitors for land, and holdings were selected without classification and regardless of public interest. But a real development of rural settlement now occurred, and, before the Act expired in 1884, the population had reached 904,980, the State was occupied



in pastoral holdings of varying sizes and began rapidly to assume importance as a principal source of the wool supply of the world. More than 35,000,000 acres had been alienated—of which 28,000,000 were sold between 1861 and 1884—and practically the whole of the remaining area of the State suitable for occupation was leased definitely for varying periods.

The demand for land continued to be for pastoral purposes until towards the end of the nineteenth century. A decline in the prices realised for wool, the rise of wheat-growing for export, and the growth of the dairying industry and mixed farming to supply oversea markets with butter and mutton, after the application of refrigeration to sea cargoes, led to a new and more intense development in rural settlement. In view of the large areas of lands alienated and leased a difficult problem arose to which the legislature has since devoted a large amount of attention.

The State was divided into three new districts—Eastern, Central, and Western—and into Land Board districts in 1884 for purposes of administration. In 1895 the principles of classification of lands, survey before selection, one man one selection, and *bona fide* selection were introduced. Special provisions for land finance to assist settlers were made in 1899, and in 1903 the closer settlement policy was entered upon whereby the State repurchased suitable lands, subdivided them, and sold them again on easy terms to settlers in "living areas." Meanwhile alienation of Crown lands continued. In 1912 certain leasehold tenures were introduced, but, in 1916, the right to convert lands into freehold tenures was extended. By June, 1921, 82,000,000 acres of land had passed out of control of the Crown, in addition to extensive areas leased for long terms. The experiences of settlers in the Western Division have been such that very little of that immense area comprising 80,368,498 acres may be considered available for intensive settlement. The total area of the State is 198,638,080 acres, and, excluding the large reserves for public purposes, lands unfit for occupation, and the area occupied by water, towns, roads, and railways a surprisingly small area of land within range of practical rural settlement now remains within the disposal of the Crown.

The character of rural settlement has been determined largely by the geographical features of the land, the distribution of rainfall, fertility of the soil, accessibility of markets and local factors, such as water supply, timber growth, and means of communication. The influence of these and other factors on settlement are treated on page 56.

The State may be classified for the purpose of considering rural settlement into five divisions, viz., Coast, Tableland, Western Slopes of the Great Dividing Range, Central Plains and Riverina, and the Western Division, and into further subdivisions shown in the frontispiece. Each division has its own special character, and its natural resources are characteristic of its climatic condition. The first four of the above divisions cover the Eastern and Central Land Divisions of the State in strips of approximately the same physiographical features, trending from north to south in the same general direction as the coast-line and principal mountain range.

#### RURAL HOLDINGS.

As already indicated, the land of New South Wales is practically all occupied in rural holdings consisting either of alienated lands, lands in course of alienation, leased Crown lands, or various combinations of these tenures. At 30th June, 1921, the number of holdings of 1 acre or more in extent used for agricultural and pastoral purposes was 80,065, embracing a total area of 172,795,213 acres. There were, in addition, approximately 2,500,000 acres of alienated land and 1,000,000 acres of leased land held in areas of less than one acre or not used for agricultural and pastoral purposes.

The area of land neither alienated nor leased from the Crown—21,426,370 acres—does not represent unoccupied land available for settlement. It includes the land unfit for occupation of any kind—estimated to be approximately 5,000,000 acres in extent—land embraced in State forests and not otherwise occupied, approximately 4,250,000 acres; reserves for necessary public purposes such as commons, travelling stock, and water reserves; roads, railway enclosures, and land at present unprofitable for occupation.

*Holdings—Number, Area, and Cultivation.*

The distribution of population is modified largely by urban settlements where special trade facilities exist, as in the metropolis, or where mining or manufacturing activities are extensively pursued, as on the coal-fields. But the density of rural settlement varies directly as the number, and inversely as the extent, of rural holdings. Permanent employment of labour, apart from the families of settlers, is very limited in rural industries.

In the following table the rural settlement of New South Wales in the year 1920-21 is analysed in the divisions referred to above:—

Particulars.	Divisions.					Whole State.
	Coastal.	Tableland.	Western Slopes.	Central Plains and Riverina.	Western.	
Population—Total, per 1,000 acres ..	67	9	8	3	1	11
•Rural „ 1,000 „ ..	17	5	5	2	0.2	3
<b>Holdings—</b>						
Number .. .. .	33,422	16,352	15,661	13,096	1,534	80,065
Average area .. .. . acres	303	1,223	1,340	3,188	50,161	2,158
Per 1,000 of Population .. .. .	22.1	71.6	83.3	110.6	32.0	38.3
Population per Holding .. .. .	45	14	12	9	31	26
<b>Area of Land Occupied—</b>						
Alienated .. .. . acres	9,391,105	11,982,941	14,887,091	23,219,594	1,668,255	61,148,986
„ per head .. .. .	6.2	52.5	79.2	196.1	34.8	29.2
Crown .. .. .	3,761,725	8,019,928	6,092,197	18,527,308	75,245,069	111,646,227
„ per head .. .. .	2.5	35.1	32.4	156.5	1567.9	53.4
Total .. .. .	8.7	87.6	111.6	352.6	1602.7	82.6
<b>Cultivation—</b>						
Total area .. .. .	262,619	406,464	1,792,071	1,997,198	5,990	4,464,342
Per Holding .. .. .	7.9	24.9	114.4	152.5	3.9	55.8
Per Head of Population .. .. .	0.2	1.8	9.5	16.9	0.1	2.1
Percentage of area of Holdings ..	2.0	2.0	8.5	4.8	0.0	2.6

\* Shires, see page 114.

The Coastal Division, containing the metropolis, naturally shows the greatest density of population, but, as the divisions move westward, population is found to be more and more scattered. The density of rural settlement is shown to vary in the same way by considering the number of holdings and the average area of holdings in each Division, while the number of holdings per 1,000 of the population shows that the area of holdings in the three main inland divisions—tableland, slopes, and plains—is inversely related to the population per holding.

Little more than one-third of the area under occupation is alienated, but of the land which remains to the Crown, nearly 20 million acres are leased with the right to purchase, and nearly 78 million acres are leased under long contracts, in some cases with a right of renewal. Moreover, the greater part is in the Western Division, which, owing to the scanty and uncertain rainfall, has not yet been found capable of supporting a large population.

With the exception of the coastal belt, most of the land of the State is devoted to sheep, even in localities where cultivation has been found profitable; on the coastal areas dairy-farming and cattle-breeding are the

principal pursuits and the area cultivated is small, for wheat does not thrive there, and no other crop is grown extensively for market in New South Wales.

Agriculture necessarily leads to closer settlement than is possible where pastoral pursuits are followed, and a comparison of the average area cultivated per holding with the average area of holdings in various divisions shows how large a development is still possible in agriculture on the slopes and plains of the interior, where the soil is fertile and the rainfall adequate and sufficiently regular. In relation to the size of holdings agriculture is practised most extensively on the Western Slopes, but the average area is largest on the Central Plains and Riverina.

Only 2·1 acres per head of population are cultivated, and rather less than 2·6 per cent. of the area of the State is placed under crop.

#### *Tenure of Holdings.*

The tenure of land-holdings in New South Wales is principally of two classes—freehold and leasehold from the Crown. Only a small proportion of the total area occupied, approximately 2·1 per cent., is rented from private owners. Tenancy, as understood in older countries is, therefore, of small extent; 93·9 per cent. of the total area alienated is occupied by its owners.

The following table shows the area occupied in each Division of New South Wales, according to the class of tenure:—

Division.	Area Alienated in Holdings.			Crown Lands.		Total Area in Holdings.
	Occupied by Owner.	Rented.	Total.	Attached to Alienated Holdings.	In Separate Holdings.	
	acres.	acres.	acres.	acres.	acres.	acres.
Coastal ... ..	8,031,910	1,359,195	9,391,105	3,256,502	505,223	13,152,830
Tableland ... ..	11,208,837	774,104	11,982,941	6,776,935	1,242,993	20,002,869
Western Slopes ... ..	14,194,383	632,708	14,887,091	4,349,366	1,742,831	20,979,288
Central Plains and Riverina	22,366,637	852,937	23,219,574	12,361,940	6,165,368	41,746,902
Western ... ..	1,628,092	50,163	1,668,255	56,801,233	18,443,836	76,913,324
New South Wales ...	57,429,879	3,719,107†	61,148,986	83,545,976	28,100,251	172,795,213

† Includes 736,327 acres farmed on shares.

Of the total area occupied, 35·4 per cent. was freehold, and 64·6 per cent. was leased from the Crown. More than two-thirds of the Crown lands so leased were in the Western Division, and utilised almost exclusively for depasturing stock.

More than one-third of the land privately rented is situated in the Coastal Division, where it amounts to more than 10 per cent. of the total area occupied in holdings. These farms are used chiefly for dairying, and the system of renting was subjected to adverse criticism in the report of the Select Committee of Inquiry into the Agricultural Industry in 1921.

The proportions of the total area of the respective Divisions, occupied in holdings of various classes are shown in the following table:—

Division.	Alienated Lands.			Crown Lands.		Total Holdings.
	Occupied by Owner.	Rented.	Total.	Attached.	Separate.	
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Coastal ... ..	35·93	6·08	42·01	14·57	2·26	58·84
Tableland ... ..	43·39	3·00	46·39	26·24	4·81	77·44
Western Slopes ... ..	58·53	2·86	61·39	17·93	7·19	86·51
Central Plains and Riverina	48·81	1·86	50·67	26·98	13·45	91·10
Western ... ..	2·03	·05	2·08	70·63	22·94	95·70
New South Wales ...	28·91	1·87	30·78	42·06	14·15	86·99

Slightly less than 87 per cent. of the total area contained within the boundaries of the State is occupied in holdings of one acre and upwards, used for agricultural or pastoral purposes. The highest proportion of absolute alienation, 61·4 per cent. of the area of the Division, has taken place in the Western Slopes, and the lowest, 2·1 per cent., in the Western Division, but taking the total area of holdings, the Western Division shows the maximum proportion of its area—95·7 per cent.—under occupation; the proportions are high also in the Central Plains and Riverina, 91·1 per cent., and in the Western Slopes, 86·5 per cent.

If reference be made to the table on page 825 it will be seen that, contrary to expectation, the proportion of unoccupied lands in each division decreases as the intensity of settlement decreases; at the same time it is apparent that the density of settlement bears an approximate relationship to the physical configuration of the country. While the greater intensity of settlement in the more easterly districts necessitates the allocation of larger proportions of land for public purposes, it is undeniable that a very considerable proportion of the remaining Crown lands in the easterly divisions are so rugged or wooded as to be unfit or unprofitable for occupation. This is especially the case in the South Coast Division, which in parts is very mountainous, only 45 per cent. of the total area being occupied, as compared with 71 per cent. in the North Coast Division and 62 per cent. in the Hunter and Manning.

#### *Number of Holdings and Average Areas.*

In the past sixty years land legislation in New South Wales has been directed principally towards an increase in the number of land holdings, and, at the same time, efforts have been made to discourage the aggregation of large areas under individual owners; for, when settlers had spread throughout the State, the existence of large estates began to prove an obstacle to further development.

Since the first Crown Lands Act was passed in 1861 the Legislature has been frequently occupied with the problem of rural development but has achieved only a limited success in promoting fresh settlement. Many varieties of tenure have been devised, but none has been found capable of populating effectively the vast tracts of land in the interior. Large holdings over 5,000 acres in extent have increased, and far more land has been alienated than is necessary to maintain the number of settlers actually remaining upon it.

The whole story of rural settlement in recent years may be summed up in the following way. Between 1861 and 1920 the number of original selections made was approximately 131,730, and this number does not include such holdings as Suburban, Returned Soldiers' Special, Residential on Goldfields, and Irrigation Farms, which are generally small in extent. At the last-named date there were in existence 61,794 alienated holdings over 30 acres in area. Allowing for the number of holdings already in existence in 1861 and remaining in existence in 1920, and for the inclusion in the number of original selections of some less than 30 acres in extent, it is clear that more than half of the individual selections made during the period have been disposed of and combined into large holdings either for the profit accruing from the sale, or through the financial or other disabilities of the original selectors.

Omitting holdings of less than 30 acres in extent, which are not important in relation to rural settlement, it is possible to trace from 1881 the development of land alienation and the increase in the number of holdings

in relation to the growth of population. This is shown in the following table :—

Year.	Alienated Holdings—over 30 acres.			Total area placed beyond State control.	Mean Population.
	Number.	Area.	Average Area.		
1881	32,521	acres. 27,791,076	acres. 855	acres. 35,293,625	765,015
1891	38,706	41,046,249	1,060	54,802,862	1,142,025
1901	48,360	45,869,742	948	61,960,272	1,366,900
1911	57,089	51,943,846	910	79,467,514	1,665,423
1916	60,435	56,047,062	927	81,531,984	1,893,170
1921	61,505	61,003,468	992	82,902,950	2,107,679

The development in every case has been slower since 1901 than previously. The relative growth of settlement, alienation, and population may be readily illustrated by reference to index-numbers in which, in each case, the year 1901 is chosen as base and called 100 :—

Year.	Alienated Holdings—over 30 acres.			Total Area placed beyond State control.	Mean Population.
	Number.	Area.	Average Area.		
1881	67	61	90	57	56
1891	80	90	112	88	84
1901	100	100	100	100	100
1911	118	113	96	128	122
1916	125	122	98	132	138
1921	127	133	105	134	154

The number of alienated holdings has increased at a slower rate than the area alienated, and the tendency towards larger holdings is distinct though not very great. Until 1901 the area of land placed beyond State control increased as rapidly as population increased; but since 1901, largely owing to the exhaustion of alienable lands, the population has grown at a faster rate. It is also very significant that the population has grown at a much faster rate throughout than the number of alienated holdings. This fact is an enlightening commentary on the drift of population from rural to urban settlements.

#### *Size of Holdings.*

Information regarding the size of rural holdings is available in two distinct classifications, one in accordance with the size of the alienated area, and the other in accordance with the total area of alienated and Crown land contained in each holding. Excluding holdings of less than 1 acre in extent, and those not used for agricultural and pastoral purposes, the alienated holdings numbering 72,856 contained 61,148,986 acres of alienated land and 83,545,976 acres of Crown lands attached at 30th June, 1921. There were also 7,209 holdings containing Crown lands only.

The following table shows in area series as at the 30th June, 1921, the alienated area of holdings and of the Crown lands attached, classified according to the size of the privately-owned land.

Area of Holding alienated.	Number of Holdings.	Area Occupied.			Proportion in each area group.	
		Alienated.	Crown Lands Attached to Alienated.	Total.	Holdings.	Alienated Land.
acres.		acres.	acres.	acres.	per cent.	per cent.
1— 50	16,560	361,982	1,477,651	1,839,633	22·73	0·59
51— 100	7,846	606,250	1,072,001	1,679,251	10·77	0·99
101— 500	26,304	6,896,291	13,323,437	20,219,728	36·10	11·28
501— 1,000	10,807	7,596,326	14,520,173	22,116,499	14·83	12·42
1,001— 3,000	8,050	13,319,588	21,408,560	34,728,148	11·05	21·78
3,001— 5,000	1,430	5,482,694	10,492,586	15,975,280	1·96	8·97
5,001— 10,000	1,071	7,331,574	8,735,599	16,067,173	1·47	11·99
10,001— 20,000	487	6,604,423	6,953,684	13,558,107	0·67	10·80
20,001— 50,000	230	6,682,729	3,941,225	10,623,954	0·32	10·93
50,001—100,000	50	3,534,017	771,295	4,305,312	0·07	5·78
Over 100,000	21	2,733,112	848,765	3,581,877	0·03	4·47
Total*...	72,856	61,148,986	83,545,976	144,694,962	100·00	100·00

\*Exclusive of holdings consisting of Crown lands only.

Owing to the wide variations between the productivity of the various divisions and even of parts of the same division, the size of holdings by itself is an indication only of the intensity of settlement and does not measure in a reliable manner the scope for increased settlement. The above table, therefore, does not show how far the existence of large alienated holdings is impeding settlement. For such a purpose it would be necessary to consider the quality of the holdings concerned, the rainfall, situation in respect of market and transport facilities, and other matters which determine the productivity and profitable use of land.

It is probable, however, that the number of holdings in excess of a living area is very considerable and that they embrace a very large area of land. This is apparent from the fact that the maximum areas allowed for residential conditional purchases are 1,280 acres in the Eastern Division and 2,560 acres in the Central Division, the minimum being 40 acres in each case. At 30th June, 1921, the number of holdings in New South Wales which included alienated areas exceeding 3,000 acres in extent was 3,269, comprising a total alienated area of 32,368,549 acres, and in addition there were attached to these holdings 31,743,154 acres of Crown lands as leases.

The total area thus comprised in these holdings, which were in most cases in excess of a living area was 64,111,703 acres, or an average of nearly 20,000 acres per holding. These holdings constituted 4·5 per cent. of the total number of alienated holdings, and included 52·9 per cent. of the total area alienated. Of these large alienated holdings only 122 were in the Western Division.

The tendency toward aggregation of large estates of alienated lands has been very marked during the past ten years in the case of holdings with an alienated area of between 3,000 and 20,000 acres, the number of such having increased from 2,066 in 1910-11 to 2,988 in 1920-21. In the same period, however, the number exceeding 20,000 acres has decreased from 362 to 301. Holdings of alienated land of between 400 and 3,000 acres have increased in number from 16,369 to 22,905, while smaller holdings of between 30 and 400 acres have not increased. Full particulars regarding the development in each division of the State are published on page 660 of the "Statistical Register of New South Wales, 1920-21."

In addition to the alienated holdings—with or without Crown lands attached—there were at the 30th June, 1921, 7,209 holdings consisting of Crown lands only, the total area thus occupied being 28,100,251 acres. The total number of holdings of 1 acre and upwards used for agricultural and pastoral purposes was, therefore, 80,065, and the total area was 172,795,213 acres—consisting of 61,148,986 acres of alienated lands, and 111,646,227 acres of Crown lands.

When consideration is given to the total area of all holdings inclusive of Crown Lands, the analysis above made is not possible, since the extensive areas of inferior Crown Lands in the Western Division, which are held on lease tenure, are necessarily in large holdings. The following table, however, provides an interesting summary of the density of settlement in 1921 :—

Size of Holding. (Alienated and Crown lands combined).	1920-21.		Proportion per cent. in each series, 1920-21.	
	Number of Holdings.	Total Area.	Holdings.	Area.
acres.				
1 - 50 ... ..	17,703	382,412	22·11	·22
51 - 100 ... ..	7,678	601,323	9·59	·35
101 - 500 ... ..	24,884	6,531,882	31·08	3·78
501 - 1,000 ... ..	11,445	8,143,676	14·29	4·71
1,001 - 3,000 ... ..	11,206	19,166,554	14·00	11·09
3,001 - 5,000 ... ..	2,796	10,730,763	3·49	6·21
5,001 - 10,000 ... ..	2,133	14,468,869	2·66	8·37
10,001 - 20,000 ... ..	1,041	14,186,963	1·30	8·21
20,001 - 50,000 ... ..	741	22,237,686	·93	12·87
50,001 - 100,000 ... ..	213	14,539,955	·27	8·42
Over 100,000 ... ..	225	61,805,125	·28	35·77
Total ... ..	80,065	172,795,213	100·00	100·00

It is apparent that in 1921 137,969,361 acres, or nearly 80 per cent. of the total area of land occupied in holdings of 1 acre and upwards for agricultural and pastoral purposes, was held in only 7,149 holdings which exceed 3,000 acres in extent. The remaining 72,916 holdings cover only 34,825,852 acres.

The number and total area of holdings less than 50,000 acres in area have shown a considerable increase in every case since 1911, but the larger holdings, which are chiefly in the Western Division, have diminished considerably. In 1911 there were 43,126 holdings of from 100 to 3,000 acres, and 5,196 from 3,000 to 20,000 acres, these in 1920-21 numbered respectively 47,535 and 5,970.

#### *Purposes for which Holdings are Used.*

The problem of rural development in New South Wales relates largely to the task of settling men permanently on the land as productive units of the population. In addition to human factors, this problem is complicated by the variations of seasons and by markets, which determine largely the profitableness of rural pursuits. An approximate classification of the main purposes for which holdings of 1 acre and upwards were used is available

for each year since 1908, and provides the following comparison which shows the nature of rural settlement:—

Main purpose for which holdings are used.	Number of Holdings.				
	1908.	1910-11.	1915-16.	1919-20.	1920-21.
Agriculture only ... ..	7,244	6,814	10,856	9,358	11,032
Dairying only ... ..	3,575	3,157	6,074	6,799	7,738
Grazing only ... ..	21,874	22,011	23,497	28,398	27,170
Agriculture and Dairying ... ..	8,377	8,258	5,641	4,859	5,112
Agriculture and Grazing ... ..	18,733	21,969	20,895	18,803	19,336
Dairying and Grazing ... ..	1,818	2,099	1,402	2,377	2,271
Agriculture, Dairying, and Grazing ... ..	3,312	4,362	1,537	1,425	1,549
Poultry, Pig, or Bee Farming ... ..	529	879	1,256	1,252	1,348
Total Holdings used mainly for Agricultural and Pastoral purposes ... ..	65,462	69,549	71,158	73,271	75,556

In addition, a considerable number of small holdings—usually less than 30 acres in extent—were used for residential, mining, and other purposes.

While the above table does not indicate the actual number of settlers occupying the land—since some holdings are held conjointly, and not a few settlers own more than one holding—the figures quoted may be considered a reliable index of the development of settlement.

Despite seasonal variations a marked increase is apparent in the number of holdings used exclusively for each of the main pursuits, but the growth has been most marked in the case of dairying and agriculture. Grazing is still the predominant rural activity, but mixed farming and agriculture are also of great importance.

#### SETTLEMENT IN DIVISIONS.

A general review of conditions relating to settlement in each division of the State will be found in Part "Geographical Sketch" of this Year Book, page 56.

##### *The Coastal Belt.*

The settlement of New South Wales first advanced westward from the metropolitan county of Cumberland. After the alluvial lands of the Hawkesbury and the Nepean valleys had been occupied, the lower portion of the valley of the river Hunter, abounding with natural resources agricultural as well as mineral, attracted settlers, and more population is now concentrated in that district than in any other part of New South Wales outside the metropolitan area. Settlement extended gradually to the whole of the watershed of the Hunter and the Manning, particularly along the intermediate river courses, such as the Paterson, the Allyn, the Williams, the Karuah, and the Myall.

The Division of the North Coast, occupied by an agricultural and dairy-farming population, exhibits the most satisfactory results as regards settlement, which during recent years has extended very rapidly along the banks of the Hastings, the Macleay, the Bellinger, the Orara, the Clarence, the Richmond, and the Tweed.

Early in the nineteenth century settlement took a southerly direction from the metropolis, and extended along the lower river valleys of the South Coast, where considerable areas of good lands were alienated in grants of large areas to a few families. For a time this land was used for sheep grazing. Later, the nature of the country, and a more intelligent conception of the



principles which should guide settlement; brought about the subdivision of some of these large estates into numerous small holdings. More suitable sheep pastures were found to exist in the hinterland, and large dairy farms, frequently on the tenure of a private lease, were established.

The figures in the following table show the rural settlement of the Coastal Division in holdings of 1 acre and upwards at the 30th June, 1921, and are exclusive of parks and reserves within the boundaries of the metropolis.

Area of Holding Alienated.	Number of Holdings.	Area Occupied.		
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.
acres.		acres.	acres.	acres.
1— 30 ...	7,553	93,747	39,232	132,979
31— 400 ...	20,322	3,124,793	789,158	3,913,951
401— 1,000 ...	3,449	2,108,529	622,303	2,730,832
1,001— 10,000 ...	1,416	3,058,179	1,199,311	4,257,490
10,001— and upwards ...	52	1,005,857	606,498	1,612,355
Coastal Division*	32,792	9,391,105	3,256,502	12,647,607

\* Exclusive of holdings consisting of Crown lands only.

The total area of this Division is 22,355,401 acres, of which 9,391,105 acres of alienated land were occupied in holdings of 1 acre and upwards, and 3,256,502 acres of Crown lands were held in conjunction with the alienated, making a total of 12,647,607 acres. In addition, there were 630 holdings, consisting of 505,223 acres of Crown lands only.

Holdings under 31 acres represent 23 per cent. of the total number, and are generally market gardens and orchards in the vicinity of towns. The moderate-sized holdings consist mainly of dairy-farms.

Rural settlement in the valleys of the northern coastal rivers, and in the country extending from the sea to the foot-hills of the Great Dividing Range, has proceeded in a way very different from that of the Tableland, which extends from north to south, and divides the rich agricultural valleys of the coastal rivers and their broken mountainous watersheds from the immense plains of the West.

The coastal districts of New South Wales extend over nearly 700 miles, and conditions are not uniform throughout, especially as the geographical features of the country vary very much. The following table presents a summary of the tenure and extent of occupied holdings in the four main divisions of the coastal belt in 1920-21 :—

Division.	Total Area of Division.	Holdings of 1 acre and upwards.	Area of land occupied in holdings of 1 acre and upwards for Agricultural and Pastoral Purposes.				
			Alienated.			Crown Lands.	Total.
			Freehold.	Private Rented.	Total.		
	acres.	No.	acres.	acres.	acres.	acres.	acres.
	000		000	000	000	000	000
North Coast ...	5,410	10,867	2,092	440	2,532	1,322	3,854
Hunter and Manning..	10,391	11,631	4,254	505	4,759	1,690	6,449
Cumberland ...	1,071	5,798	295	87	382	3	385
South Coast ...	5,484	5,126	1,391	327	1,718	747	2,465
Total ...	22,356	33,422	8,032	1,359	9,391	3,762	13,153

Apart from the small area in the county of Cumberland which surrounds the metropolis, and is, therefore, closely settled in order to supply metro-

politan markets with vegetables, fruit, milk, eggs, poultry, and similar products of small farms, the North Coast is by far the most closely-settled part of the Coastal Division. Although its area is rather less than that of the South Coast, it has more than twice as many farms, and nearly as many as the Hunter and Manning Division, which is twice its area. The Hunter and Manning Division, however, extends much further from the coast into the mountainous districts than does the North Coast Division. The proportion of the total area occupied in holdings is 71 per cent. in the North Coast Division, 62 per cent. in that of Hunter and Manning, but only 45 per cent. on the South Coast. The system of privately renting land, so common in certain older countries, is more extensively practised in the coastal districts than elsewhere in New South Wales. In no case, however, does it exceed 20 per cent. of the total area alienated, or 14 per cent. of the total area occupied.

The following analysis of the main purposes for which these holdings were used in 1920-21 provides an instructive statement of the diversity of pursuits.

Purpose.	Number of Holdings in Division.				
	North Coast.	Hunter and Manning.	Cumberland.	South Coast.	Total.
Agriculture only ... ..	890	1,556	2,363	438	5,247
Dairying only ... ..	4,337	1,243	310	1,513	7,403
Grazing only ... ..	2,336	3,600	682	1,508	8,126
Agriculture and dairying ... ..	1,710	1,995	91	513	4,309
Agriculture and grazing ... ..	392	935	352	222	1,901
Dairying and grazing ... ..	613	809	42	280	1,744
Agriculture, dairying, and grazing ... ..	314	417	75	56	862
Poultry only ... ..	...	86	989	54	1,129
Poultry, Bees, Pigs, etc. ... ..	11	24	93	8	136
Residential and other purposes ... ..	264	966	801	534	2,565
Total ... ..	10,867	11,631	5,798	5,126	33,422

Particulars of the respective amounts of the principal products from these holdings are shown on page 57 of this Year Book.

It is apparent from this statement that the North Coast district is by far the most important dairying locality of the State. Very little wheat is grown in the coastal districts, and comparatively few sheep are depastured, and in the absence of the two staple industries, dairying and mixed farming pursuits are the main activities of the population; but a considerable number of farms are used for cattle-raising. The number of small agricultural holdings—orchards, market gardens, etc.—and poultry farms in the neighbourhood of the metropolis is very great.

#### *The Tableland.*

After crossing the ranges which form the western boundary of the Coastal Belt, settlement proceeded in the Central Tableland, thence south and north, and later westwards, at first following the courses of the great rivers.

On the Northern Tableland tenants constitute a smaller section of the occupiers of alienated land than elsewhere. Agriculture has made little headway on the tablelands, largely on account of the geographical features of the country, but crops are sown to an appreciable extent in the central portions of the division. Sheep-grazing is the principal pursuit, but a considerable number of cattle occupy parts of the Northern Tableland.

The following statement shows the extent of rural settlement in the three Divisions of the Tableland at the 30th June, 1921.

Size of Holding.	Number of Holdings	Area Occupied.		
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.
acres.		acres.	acres.	acres.
1— 30 ... ..	1,741	23,896	62,934	86,830
31— 400 ... ..	7,776	1,362,630	1,650,587	3,013,217
401— 1,000 ... ..	3,055	1,952,228	1,574,257	3,526,485
1,001—10,000 ... ..	2,389	6,025,241	2,728,244	8,753,485
10,001 and upwards ... ..	150	2,618,946	760,913	3,379,859
Tableland Division*	15,111	11,982,941	6,776,935	18,759,876

\* Exclusive of holdings consisting of Crown lands only.

There were also 1,241 holdings of Crown land only, the area being 1,242,993 acres.

The following table provides an analysis of the number and tenure of rural holdings in the three main divisions of the Tablelands :—

Division.	Total area of division.	Holdings of 1 acre and upwards.	Area of land occupied in Holdings of 1 acre and upwards for agricultural and pastoral purposes.				
			Alienated.			Crown Lands.	Total.
			Freehold.	Private rented.	Total.		
	acres.	No.	acres.	acres.	acres.	acres.	acres.
Northern Tableland ... ..	000		000	000	000	000	000
Central Tableland ... ..	8,928	4,404	3,633	134	3,767	3,565	7,332
Southern Tableland ... ..	8,989	7,551	3,766	318	4,084	2,062	6,146
	7,914	4,397	3,810	322	4,132	2,393	6,525
Total ... ..	25,831	16,352	11,209	774	11,983	8,020	20,003

While the proportion of land occupied in each Division varies from 82 per cent. in the Northern to 68 per cent. in the Central, and 82 per cent. in the Southern tablelands, rural settlement is densest in the central districts, which were the first to be occupied. Less than one-half of the total area of the tableland division is alienated, and two-fifths of the area occupied is owned by the Crown. The system of private-renting is much less extensive than in the coastal districts, only 6·5 per cent. of the area alienated, or 3·8 per cent. of the total area occupied, being held in this way.

The main purposes for which these holdings are used are shown in the following table :—

Purpose.	Number of Holdings.			
	Northern Tableland.	Central Tableland.	Southern Tableland.	Total.
Agriculture only ... ..	240	1,237	145	1,622
Dairying only ... ..	79	66	73	218
Grazing only ... ..	2,375	2,813	2,746	7,934
Agriculture and Dairying ... ..	134	130	46	310
Agriculture and Grazing ... ..	1,043	2,574	1,034	4,651
Dairying and Grazing ... ..	220	47	87	354
Agriculture, Dairying, and Grazing ... ..	191	127	41	359
Poultry, Bees, Pigs, etc. ... ..	5	37	5	47
Residential and other purposes ... ..	117	520	220	857
Total ... ..	4,404	7,551	4,397	16,352

Grazing is the predominant pursuit throughout the tablelands, but agriculture and mixed farming—agriculture and grazing combined—are important activities, especially on the Central Tableland. Dairy farms are of inconsiderable number, and small farming is practically non-existent.

*The Western Slopes.*

There is a great extent of arable land in the Western Slopes, and although the proportion devoted to cultivation is greater than in any other Division, it is only one-sixteenth part of the total area. Distance from markets was the principal obstacle to the development of agriculture; but with the extension of the railway system, improvement in methods of wheat-growing, and development in the practice of share-farming, a considerable impetus was given to this branch of rural industry.

The extent of rural settlement in the Western Slopes at the 30th June, 1921, is shown in the following table:—

Size of Holding.	Number of Holdings.	Area Occupied.		
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.
acres.		acres.	acres.	acres.
1— 30 ... ..	1,595	22,015	58,171	80,186
31— 100 ... ..	5,271	992,336	615,639	1,607,975
401— 1,000 ... ..	4,301	2,708,941	1,100,593	3,809,534
1,001—10,000 ... ..	3,138	7,833,347	2,094,651	9,927,998
10,001 and upwards ... ..	165	3,330,452	480,312	3,810,764
Western Slopes Division*	14,470	14,887,091	4,349,366	19,236,457

\* Exclusive of holdings consisting of Crown lands only.

At 30th June, 1921, there were also in the Division of the Western Slopes 1,191 holdings consisting of Crown Lands only with a total area of 1,742,831 acres.

The area, number, and tenure of rural holdings in the various districts of the Western Slopes are shown below:—

Division.	Total Area of Division.	Holdings of 1 acre and upwards.	Area of Land occupied in Holdings of 1 acre and upwards for Agricultural and Pastoral purposes.				
			Alienated.			Crown Lands.	Total.
			Freehold.	Private Rented.	Total.		
	acres.	No.	acres.	acres.	acres.	acres.	acres.
North Western Slope ...	9,813	5,024	5,512	244	5,756	3,063	8,819
Coastal Western Slope ...	6,253	4,225	3,348	191	3,539	1,711	5,250
South Western Slope ...	8,186	6,412	5,334	258	5,592	1,318	6,910
Total ... ..	24,252	15,661	14,194	693	14,887	6,092	20,979

In relation to area, settlement is most dense on the Central Western Slope and the highest proportion of occupied land is again greatest in the Northern districts. The proportion of Crown lands occupied is 29 per cent. of the total; the system of private renting is less extensive than in the Coastal or Tableland districts, the area private rented being only 4·7 per cent. of the total area alienated and 3·3 per cent. of the area occupied.

The following statement shows the principal purposes for which rural holdings were used in the Western Slopes Division in 1920-21 :—

Purpose.	Number of Holdings in Division.			
	North Western Slope.	Central Western Slope.	South Western Slope.	Total.
Agriculture only ... ..	403	404	757	1,564
Dairying only ... ..	33	17	35	85
Grazing only ... ..	2,131	940	1,989	5,060
Agriculture and Dairying ... ..	254	17	82	353
Agriculture and Grazing ... ..	1,935	2,717	2,942	7,594
Dairying and Grazing ... ..	56	6	53	115
Agriculture, Dairying, and Grazing ... ..	73	24	141	238
Poultry, Bees, Pigs, etc. ... ..	5	7	11	23
Residential and Other Purposes ... ..	134	93	402	629
Total ... ..	5,024	4,225	6,412	15,661

Mixed farming—agriculture and grazing—is the principal rural activity, but grazing predominates on the North-western Slopes. The number of holdings used for agricultural purposes only is important, but dairying and small farming are not extensively carried on.

*The Central Plains and the Riverina.*

The portion of the Central Land Division of New South Wales which lies beyond the Western Slope of the Great Dividing Range constitutes the Division known as the Central Plains and the Riverina. The latter is the Southern Division of the series and is the most important agricultural region of the State. The Coastal, Tableland, and Western Slopes Divisions are of approximately equal area, but the Plains Division is nearly double their size.

The following statement shows the extent of rural settlement in the Central Plains and the Riverina at the 30th June, 1921 :—

Size of Holding.	Number of Holdings.	Area Occupied.		
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.
acres.		acres.	acres.	acres.
1— 30 ... ..	386	5,161	34,290	39,451
31— 400 ... ..	1,687	363,114	583,310	946,424
401— 1,000 ... ..	3,913	2,574,295	2,121,625	4,695,920
1,001— 10,000 ... ..	3,429	8,601,712	5,614,002	14,215,714
10,001 and upwards ... ..	385	11,675,312	4,008,713	15,684,025
Central Plains and } Riverina Division* }	9,800	23,219,594	12,361,940	35,581,534

\* Exclusive of holdings consisting of Crown lands only.

In this Division there were also 3,296 holdings of Crown lands only, the total area in occupation being 41,746,902 acres.

The following table shows the number, tenure, and extent of holdings occupied for agricultural and pastoral purposes in the Division on 30th June, 1921 :—

Division.	Total Area of Division.	Holdings of 1 acre and upwards.	Area of Land occupied in Holdings of 1 acre and upwards for Agricultural and Pastoral Purposes.				
			Alienated.			Crown Lands.	Total.
			Freehold.	Private rented.	Total.		
	acres. 000	No.	acres. 000	acres. 000	acres. 000	acres. 000	acres. 000
North-central Plain ...	10,031	1,675	3,264	38	3,302	4,832	8,134
Central Plain ...	16,030	3,496	6,441	310	6,751	8,435	15,186
Riverina ...	19,767	7,925	12,662	505	13,167	5,260	18,427
Total ...	45,828	13,096	22,367	853	23,220	18,527	41,747

This Division consists almost entirely of plains which extend over immense areas.

Settlement is comparatively scattered in the northern plains, the average size of the holdings being nearly 5,000 acres, while a smaller proportion of the total area is occupied than in the south. But the density of settlement is increasing with the extension of wheat-growing, which already has assumed great importance in the Central and, especially, in the Southern districts. The existence of a closely-settled but comparatively small area of irrigated lands in the Riverina exaggerates the apparent density of settlement in that division. Only one-half of the total area has been alienated, but while the proportion alienated is 33 per cent. of the total area in the Northern districts it is twice as great in the Riverina, where the land is more productive.

The area held under the system of private-renting is of small extent, being in all cases less than 5 per cent. of the total area alienated. The area of Crown lands occupied is very considerable in all Divisions, but in the Northern and Central Districts it greatly exceeds the area of occupied alienated lands.

The following table shows the main purposes for which the holdings in the above table were used in 1920-21 :—

Purpose.	Number of Holdings in Division.			
	North Central Plains.	Central Plains.	Riverina.	Total.
Agriculture only ...	37	266	2,135	2,438
Dairying only ...	2	1	19	22
Grazing only ...	1,365	1,768	1,679	4,812
Agriculture and Dairying ...	1	1	137	139
Agriculture and Grazing ...	211	1,331	3,604	5,146
Dairying and Grazing ...	4	1	51	56
Agriculture, Dairying, and Grazing ...	...	1	89	90
Poultry, Bees, Pigs, etc. ...	...	3	1	4
Residential and other purposes ...	55	124	210	389
Total ...	1,675	3,496	7,925	13,096

While grazing, with a very little mixed-farming and agriculture, predominates in the North-central Plains, agriculture assumes increasing importance in the South until, finally, combined with grazing, it predominates in the Riverina. On the irrigated lands of the Murrumbidgee a considerable number of holdings are used for small farming, and this accounts for the greater part of the holdings used for agriculture only and for dairying in the Riverina. Nevertheless, taking into account the areas shown in the previous table, the existence of agricultural pursuits is seen to have a very pronounced effect on the density of settlement.

*The Western Division.*

In the Western Division of the State settlement has progressed slowly, and the population is in a large measure maintained by the mining activities of a few counties. The great mining centre of Broken Hill, situated close to the boundary of South Australia, has attracted a large population, but the copper and gold mines in the region east of the Darling, which formerly supported many people, are now languishing. Excluding a few closely-settled areas, the whole of this vast terrain, in extent more than one-third of New South Wales, is used for depasturing stock, but, in relation to its area, neither its sheep flocks nor its cattle herds are numerous.

The following statement shows the extent of rural settlement in the Western Division at the 30th June, 1921 :—

Size of Holding.	Number of Holdings.	Area Occupied.		
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.
acres.		acres.	acres.	acres.
1— 30 ... ..	76	699	259,042	259,741
31— 400 ... ..	255	37,753	8,374,361	8,412,114
401— 1,000 ... ..	137	90,712	12,508,760	12,599,472
1,001— 10,000 ... ..	179	615,377	29,000,537	29,615,914
10,001 and upwards ... ..	36	923,714	6,658,533	7,582,247
Western Division*	683	1,668,255	56,801,233	58,469,488

\* Exclusive of holdings consisting of Crown lands only.

The proportion of land alienated is only 2 per cent. of the total area, being an aggregate of 1,668,255 acres out of 80,368,498 acres which the Division is estimated to contain. The land in the Western Division may be alienated only by auction, otherwise it may be held under lease from the Crown. The area of Crown lands held is therefore very large, 56,801,233 acres being attached to alienated holdings, and 18,443,836 acres in 851 holdings consisting of Crown lands only. The scantiness and irregularity of the rainfall, the lack of water, and the excessive evaporation, militate against agricultural production and the successful rearing of cattle. Apart from the silver, gold, copper, and opal fields, sheep-breeding is practically the only industry, except in the vicinity of townships, where market-gardens and fruit orchards are cultivated. In 1920-21 there were, in the whole Division, only 1,534 holdings used for agricultural and pastoral purposes; of these 161 were used for agriculture only, and 44 for agriculture and grazing combined, but, except on the small irrigation area at Curlwaa, cultivation on a commercial scale was practically non-existent.

## CROWN LAND HOLDINGS.

Crown lands are held, as has been explained, either in conjunction with alienated land or as separate holdings. The total area held in conjunction with alienated lands is shown above.

Particulars of holdings consisting of Crown lands only are shown below.

Division.	Number of Holdings.	Area held.	Average area of Holdings.
		acres.	acres.
Coastal ... ..	630	505,223	802
Tableland ... ..	1,241	1,242,993	1,002
Western Slopes ... ..	1,191	1,742,831	1,463
Central Plains and Riverina ...	3,296	6,165,368	1,871
Western... ..	851	18,443,836	21,673
New South Wales ... ..	7,209	28,100,251	3,898

It will be observed that the average area of the holdings is comparatively small in the Eastern and Central Land Divisions. In the Western Division, where intense settlement has not yet been found practicable, the area of holdings consisting of Crown Lands only is 65 per cent. of the total area so held in the State.



## LAND LEGISLATION AND SETTLEMENT.

### AREA OF NEW SOUTH WALES.

THE area of New South Wales, including Lord Howe Island (5 square miles) and the Federal Capital Territory (about 940 square miles), as stated previously in this Year Book, is estimated at 310,372 square miles, or 198,638,080 acres, being a little over two and a half times the combined area of Great Britain and Ireland. Excluding the surface covered by rivers and lakes, the area within the boundaries of the State is 195,669,000 acres, or about 305,733 square miles, of which the greater portion has been alienated under various forms of tenure, classified as freehold or leasehold. The formal transfer on 1st January, 1911, of 583,660 acres at Yass-Canberra, and of 17,920 acres at Jervis Bay in 1915, to the Commonwealth Government as Federal Capital Territory, reduced the land surface of the State to 195,067,420 acres.

### TERRITORIAL DIVISIONS.

Under various Acts the State is divided into three territorial divisions, Eastern, Central, and Western, the boundary lines running approximately north and south. The conditions of alienation and pastoral occupation of Crown lands differ in each of the three divisions of the State.

The Eastern and Central Divisions are subdivided into Land Districts, in each of which is stationed a Crown Land Agent, whose duty is to receive applications and furnish information regarding land. Groups of these districts are arranged in larger areas, under the control of Land Boards, whose decisions were, prior to 10th December, 1921, subject to review by the Land Appeal Court, composed of a President and two Commissioners, whose awards in matters of administration had the force of judgments of the Supreme Court. Questions of law could be submitted to the Supreme Court, either on the written request of the parties, or by the Land Appeal Court. On the date before mentioned, this Court was dissolved on assent being given to Act No. 10, 1921, constituting the Land and Valuation Court, to which are referred all appeals, references, or other matters under the Crown Lands Acts, the Pastures Protection Act, 1912, the Closer Settlement Acts, the Water Act, 1912, the Public Roads Act, 1902, or any other Act in respect of which jurisdiction was conferred prior to the passing of the Act, upon the Land Appeal Court.

The Judge may sit alone, but in any objection or appeal against any valuation of land, the levying of any rate, or the assessment of ratable property, or any claim for compensation for land resumed, the Court may elect to sit with two assessors, who have power to advise, but not to adjudicate in any proceedings before the Court.

Control of the lands within the Western Division is vested in the Western Land Board, consisting of three Commissioners.

The Eastern Division has an area of 60,661,946 acres (exclusive of an area of 601,580 acres of Commonwealth territory), and includes a broad belt of land between the sea-coast and a line nearly parallel to it, thus embracing the coastal districts of the State, as well as the northern and southern tablelands. In this division is excellent agricultural land, and it includes all the original centres of settlement most accessible to the markets of the State.

The Central Division embraces an area of 57,055,846 acres, extending from north to south between the western limit of the Eastern Division

to the Macintyre and Darling Rivers, Marra Creek, the Bogan River, and across to the River Lachlan, along the Lachlan to Balranald, and thence to the junction of the Edward River with the Murray. The area thus defined contains the upper basin of the Darling River in the northern part of the State, and the basins of the Lachlan, the Murrumbidgee, and other affluents of the Murray in the southern portions. The land in this division is still devoted mainly to pastoral pursuits, but about 2,500,000 acres are cultivated for wheat in a normal season.

The Western Division is situated between the western limit of the Central Division and the South Australian border. It contains an area of 80,318,708 acres, watered by the Darling River and its tributaries, and is mainly devoted to pastoral pursuits. Water conservation and irrigation, and railway, and other means of communication may ultimately make agriculture possible over this large area, and at the present time special attention is being directed to this matter, but legislation in regard to the occupation of the lands of the district is based upon the assumption that for many years to come there will be little inducement for agricultural settlement.

#### METHODS OF ACQUISITION AND OCCUPATION.

Under the Acts now in force, land in the Eastern and Central divisions of the State may be acquired by the following methods:—

(a) Under residential conditions—

- (1) Conditional and additional purchase ;
- (2) Classified conditional purchase ;
- (3) Homestead selection ;
- (4) Settlement purchase, under Closer Settlement Acts ;
- (5) Homestead farm ;
- (6) Suburban holding ;
- (7) Irrigation farm ;
- (8) Returned Soldiers' special holding ;
- (9) Conditional purchase lease ;
- (10) Conditional lease ;
- (11) Residential on gold and mineral fields lease ;
- (12) Crown lease ;
- (13) Settlement lease.

(b) Under non-residential conditions—

- (1) Conditional purchase, without residence ;
- (2) Improvement purchase on gold-fields ;
- (3) Auction sale ;
- (4) After-auction sale ;
- (5) Special sale, without competition ;
- (6) Exchange ;
- (7) Annual lease ;
- (8) Inferior lands lease ;
- (9) Occupation license ;
- (10) Scrub lease ;
- (11) Special lease ;
- (12) Improvement lease ;
- (13) Snow-lands lease ;
- (14) Week-end lease ;
- (15) Town lands lease ;
- (16) Special conditional purchase lease.

The maximum area which may be purchased conditionally differs in the Eastern and Central Divisions according to the method of acquisition

shown in the statement above. In the Western Division land may be alienated by auction or occupied under lease.

Certain of the above tenures may be converted, under specified conditions, into other tenures.

#### *Conditional Purchase.*

Unreserved Crown lands in the Eastern and Central Divisions not held under pastoral or other lease, are available for conditional purchase, and lands held under annual lease or occupation license may also be acquired in this way, if not otherwise reserved. Land under conditional lease in any division may be purchased conditionally by the leaseholder only. Lands within suburban boundaries or within population areas may be proclaimed as special areas, and are open to conditional purchase under the special conditions prescribed. The value of any improvements on a conditional purchase must be paid by the applicant.

A residential conditional purchase may be taken up by males of or over age 16, or by females of or over age 18, provided that a woman is unmarried, or a widow, or judicially separated from her husband; for a non-residential conditional purchase the minimum age limit is 21 years.

The minimum and maximum areas allowed for each class of conditional purchase are as follow :—

Class.	Division.	Minimum Area.	Maximum Area.
		acres.	acres.
Residential ...	Eastern ...	40	1,280
„ ...	Central ...	40	2,560
Non-residential...	Eastern ...	40	320
„ ...	Central ...	40	320
Special area ...	Eastern ...	...	320
„ ...	Central ...	...	640

With regard to special areas, both the minimum and maximum areas are subject to proclamation in the *Government Gazette*, and are, therefore, liable to limitation. Any conditional purchaser may take up the maximum area at once, or by a series of purchases at convenient intervals. With the exception of non-residential purchases, the specified maximum areas may be exceeded by means of additional holdings, but the area must not exceed a home-maintenance area. By this is meant an area which, used for the purpose for which it is reasonably fitted, would be sufficient for the maintenance of an average family in average seasons and circumstances. Additional holdings, if made within areas specially set apart for that purpose, need not necessarily adjoin the original holdings, but must be situated within a reasonable working distance.

Areas may be set apart for original holdings, or for additional holdings, but no such area may be selected under both classes of holdings. Values and rentals are specified in the official notices under the Act. Lands may be classified and set apart, by notification, at specified prices.

Applications for conditional purchase, or for additional conditional purchase, must be lodged with the Crown Lands Agent of the district in which the land is situated, and a deposit and survey fee paid at the same time. The statutory price of ordinary Crown lands is fixed at £1 per acre for residential conditional purchase, but in special areas and on lands within classified areas the price per acre may be either above or below that

amount. The deposit on all residential conditional purchases is at the rate of 5 per cent. of the capital value, but on non-residential conditional purchases the price of the land is doubled, the deposit being at the rate of 2s. in the £ of such increased value; at least one-tenth of the survey fee must be lodged with the application unless such fee has been paid by a previous holder, through whom the applicant claims title, and stamp duty must be paid. Deposit and survey fee need not be lodged in connection with an application for a holding within a classified area which is made during the first week the land becomes available, but they must be paid subsequently as directed by the Land Board. Under ordinary conditions the balance of purchase money, with interest at  $2\frac{1}{2}$  per cent. per annum, is cleared-off by twenty-seven annual payments of 1s. per acre, and a final smaller payment. The first instalment is due on the expiration of three years from the date of the contract.

A resident conditional purchaser in certain circumstances may reduce his annual instalment of 1s. to 9d. per £, in which case it will take the selector about forty-one years to pay. Under special circumstances a similar privilege may be extended to conditional purchasers not in residence. By the Crown Lands Act Amendment Act of 1903, the rate of interest on the balance of purchase money was reduced from 4 to  $2\frac{1}{2}$  per cent. per annum, being retrospective only in special circumstances.

Upon receipt of an application for a conditional purchase the Land Board may cause the land to be surveyed and a report to be supplied by the surveyor, and may either confirm or disallow the application. In case of confirmation a certificate is issued to the applicant.

The original conditional purchase must be occupied continuously by the selector for a period of five years, and residence must be commenced within three months after the application has been confirmed by the Land Board. Residence may be suspended conditionally, or remitted by the Land Board, for sufficient cause, for stated periods, or in certain circumstances may be effected on the holding of a member of the same family, or on another of applicant's holdings, or in a village or town, or elsewhere within reasonable distance. In certain cases a wife may carry out residence on her husband's holding, or, conversely, a husband may carry out residence on his wife's holding. Each additional conditional purchase or conditional lease is subject to the condition of residence indicated, but the place of residence may be on any block of the series, and the term may be reduced in certain circumstances, by the applicant's previous residence on the series. The Minister may permit improvements in lieu of residence where the unimproved value of the area is not greater than £300.

The selector must enclose his land, within three years after confirmation, with such a fence as the Land Board may prescribe; or he may substitute improvements in lieu of fencing. In such cases, permanent improvements, of the value of 6s. per £ of purchase money but not exceeding £384, are required within three years, and these improvements must be brought up to the value of 10s. per £ of purchase money, but not exceeding an aggregate value of £640, within five years from the date of confirmation. In the case of non-residential purchases, the land must be fenced within one year after date of confirmation, and within five years other improvements to the value of £1 per acre must be effected. Fencing may be superseded by other improvements equivalent to 30s. per acre, within five years after confirmation.

Under the Crown Lands Amendment Act, 1908, an original non-residential conditional purchase, with any additional non-residential conditional purchase made in virtue of it, may be converted into an original residential

conditional purchase, provided that the five years' residence commences from the date of application for such conversion. This term of residence is subject to reduction under certain conditions, and all moneys previously paid are credited towards payment of the converted conditional purchase.

A conditional purchase, residential or otherwise, may be converted into a homestead farm under certain conditions.

Transactions in respect of conditional purchase applications and deeds issued from 1862 to 30th June, 1921, were as follows:—

Year.	Conditional Purchase—Applications made.		Conditional Purchase—Applications confirmed.		Conditional Purchases for which Deeds have issued.		Conditional Purchases in existence.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.		acres.
1862-1911 .. .. .	284,514	40,315,295	68,934	12,329,408	110,915	14,569,791	93,408	15,614,036
1912 .. .. .	1,258	190,969	1,099	175,044	5,231	671,564	92,208	16,529,038
1913 .. .. .	783	103,844	839	105,167	3,265	406,019	92,183	17,307,305
1914 .. .. .	512	65,306	554	67,534	2,338	322,556	91,935	17,837,702
1915 .. .. .	362	46,175	287	35,249	2,354	304,012	90,904	18,035,210
1916 .. .. .	216	22,495	183	23,552	2,462	307,016	89,670	18,315,095
1917 .. .. .	168	25,761	108	13,025	2,881	357,828	88,493	18,693,429
1918 .. .. .	271	32,085	121	16,211	2,861	388,338	87,651	19,225,738
1919 .. .. .	511	75,370	201	24,911	3,698	559,779	86,208	19,435,807
1920 .. .. .	773	126,179	257	35,612	5,397	686,385	82,938	19,365,856
1921 .. .. .	533	90,573	480	78,461	4,792	664,522	78,971	18,672,521
Total (as at 30th June, 1921)	289,901	41,094,052	73,063	12,904,174	146,194	19,228,810	78,971	18,672,521

In 1908 the Conversion Act was passed, and since 1909 the number of selections has been reduced by forfeitures, cancellations, conversions into homestead selections, etc., and increased by conversions from various other tenures under the Crown Lands Act, so that the land wholly alienated, or in process of alienation, by conditional purchase, on 30th June, 1921, amounted to 37,901,331 acres, contained in 225,165 purchases. Included in the foregoing are 146,194 completed purchases, covering 19,228,810 acres, upon which deeds have now been issued. The balance represents the number of purchases still in force, but upon which the conditions, payments, etc., have not yet been fulfilled, viz., 78,971 with an area of 18,672,521 acres.

Applications for conversion to mineral conditional purchase may, under the 1910 Act, be annulled or withdrawn, and all moneys, less authorised deductions for cost, refunded with the application.

#### *Improvement Purchases.*

Holders of miners' rights or of business licenses on a gold-field, being in authorised occupation by residence on land containing improvements, may purchase such land without competition. Improvements must include a residence or place of business, and be of the value of £8 per acre on town land, and of £2 10s. per acre on any other land.

During 1920-21, 42 applications were granted for a total area of 21 acres 2 roods, the total purchase price being £887.

#### *Auction Sales and After-auction Purchases.*

Crown lands are submitted for auction sale under two systems. Under the ordinary system the balance of purchase money is payable, without interest, within three months of the day of sale, while, under the deferred payment system, the balance is payable by instalments, with 5 per cent. interest, distributed over a period not exceeding ten years; in either case, not less than 10 per cent. of the purchase money must be deposited at the time of sale.

Auction sales are limited by law to 200,000 acres in any one year. Town lands may be sold in blocks not exceeding half an acre, at an upset price of not less than £8 per acre; and suburban lands must not exceed 20 acres in one block, the minimum upset price being £2 10s. per acre. Country lands may be submitted in areas not exceeding 640 acres, the upset price being not less than 15s. per acre. The value of improvements on the land may be added to the upset price.

Town or suburban land or portions of country land of less than 40 acres which have been passed at auction may be bought, with the Minister's consent, at the upset price; a deposit of 25 per cent. of such upset price is payable at the time of application, the balance being payable on the terms fixed for the auction sale.

#### *Special Non-competitive Sales.*

Any unnecessary road which bounds or intersects freehold land may be closed and sold to the freeholder at a price determined by the Land Board, and any unnecessary road which passes through land held under conditional purchase may be closed and added to the area.

Reservations are maintained in many Crown grants of land having water frontage, being usually 100 feet from high-water mark; but the Crown may rescind the reservation, and convey the land to the holder of the adjoining land, at a price to be determined by the Land Board.

The owner in fee-simple of land having frontage to the sea, or to any tidal water or lake, who desires to reclaim and purchase any adjoining land lying below high-water mark, may apply to the Minister for Lands to do so, except in the case of Port Jackson, the control of which is vested in the Sydney Harbour Trust. Reclamations which might interrupt or interfere with navigation are not authorised.

Land encroached upon by buildings erected on granted land, or land situated between granted land and a street or road, which forms, or should form, the way of approach to the granted land, or land to which no way of access is attainable, or land which is insufficient in area for conditional purchase, may be purchased by the owner in fee-simple of the adjoining land, at a price determined by the Board.

#### *Exchange of Land between the Crown and Private Owners.*

Before the granting of fixity of tenure in connection with pastoral leases, the lessees had made it a practice to secure portions of their runs by conditional purchases and purchases in fee-simple. The practice was disadvantageous to the public estate, because Crown lands were left in detached blocks severed by lessees' freehold properties; and the lessees realised that it would be convenient to them to gather their freeholds together in one or more consolidated blocks by surrender of the private lands in exchange for Crown lands elsewhere.

Under the provisions of the Crown Lands Consolidation Act, 1913, the Governor, with the consent of the owner, may exchange any Crown lands for any other lands of which a grant in fee simple has been issued.

The Governor may accept in exchange for Crown lands, lands in respect of which a balance of purchase money remains unpaid, if upon payment of such balance the right to a grant in fee simple becomes absolute. In any such case a grant of Crown lands in exchange will not be issued until the balance of purchase money has been duly paid.

Applications received under this head during the year 1920-21 numbered 59, and 108 applications were outstanding on the 30th June, 1920. Twenty-two applications, embracing 29,077 acres, were granted in 1920-21, and 21 were either refused or withdrawn, etc.

*Homestead Selection and Homestead Grant.*

The appropriation of areas for homestead selection was a prominent feature of the Act of 1895, the land chosen for subdivision being generally agricultural land.

Under the Crown Lands (Amendment) Acts, of the years 1908 and 1912, a homestead selection or grant may be converted into a homestead farm, or a conditional purchase lease, or a conditional purchase, or a conditional purchase and conditional lease, provided the area contained in such conditional lease does not exceed three times the area in the conditional purchase.

Lands are not now made available for homestead selections, such tenure having been practically replaced by that of homestead farm. Applications dealt with subsequent to 1912, are either in connection with areas previously set apart for homestead selection, or as additional areas, principally the latter. A large number of persons have, however, selected under this form of holding, as will be seen from the following statement which shows the applications and confirmations in regard to homestead selections and homestead grants issued up to 30th June, 1921.

Year.	Homestead Selections.				Homestead Grants issued.	
	Applications.		Confirmations.			
	No.	Acres.	No.	Acres.	No.	Acres.
1895 to 1911 ... (Year ended 30th June)	9,418	3,680,289	7,353	2,632,456	4,315	1,751,263
1912 ... ..	537	119,278	466	94,641	196	88,517
1913 ... ..	65	19,595	106	30,879	175	55,377
1914 ... ..	19	4,941	22	5,707	231	39,231
1915 ... ..	30	16,983	18	7,233	198	59,919
1916 ... ..	8	3,141	17	7,559	161	48,479
1917 ... ..	5	3,970	5	1,337	212	54,791
1918 ... ..	24	18,175	10	5,535	189	49,306
1919 ... ..	20	17,266	23	19,232	172	30,807
1920 ... ..	23	15,365	8	9,690	55	20,502
1921 ... ..	21	14,069	21	7,819	25	9,004
Total ... ..	10,170	3,913,072	8,049	2,822,088	5,929	2,207,196

After making allowance for conversions to and from other tenures, forfeitures, etc., the number of homestead selections and grants in existence on 30th June, 1921, was 2,863, of an area of 895,330 acres.

*Homestead Farms.*

The new tenures created by the Crown Lands Amendment Act of 1912 were homestead farms, suburban holdings, Crown leases, and irrigation farms. Crown lands are set apart for disposal as homestead farms, but the land may be made available before survey. Crown Lands available for conditional purchase (unless otherwise notified in the *Gazette*) are also available for homestead farm, and land may be set apart for additional homestead farms.

A person—including an alien—of a minimum age of 16 years, if a male, or 18 years, if a female, may apply for a homestead farm, provided that the applicant does not hold under any tenure—except lease which has less than five years to run, and does not confer right to purchase the freehold—an area of land which, added to the area of the homestead farm, would substantially exceed a home-maintenance area. In estimating what constitutes a

home-maintenance area, the joint area held by husband and wife (unless judicially separated) is taken into account as lands held by one person. An alien becoming the holder of a homestead farm, suburban holding, Crown lease, or irrigation farm, must become naturalised within three years. A married woman may apply if possessed of a separate estate. Persons who have selected previously are disqualified in certain circumstances.

The title of a homestead farm is a lease in perpetuity. The annual rent is charged at the rate of  $2\frac{1}{2}$  per cent. of the capital value, but for the first five years the holder, in lieu of payment of rent, may expend an equal amount on improvements of a permanent character, which (except boundary fencing) are in addition to those which are required otherwise as a condition of improvement or expenditure of the lease. The capital value is subject to reappraisal after the first twenty-five years and for each subsequent period of twenty years.

A condition of five years' residence is attached to every homestead farm, but in special cases residence in a town or village, or anywhere within reasonable working distance, may be allowed. Residence may be permitted on a holding of a member of the same family, or on another of the selector's holdings within reasonable working distance. Suspensions or remissions may be granted for such periods as determined by the Land Board. In certain cases a wife may carry out residence on her husband's holding, or, conversely, a husband may carry out residence on his wife's holding.

The Minister may permit improvements in lieu of residence where the unimproved value of the area is not greater than £300.

The perpetual lease grant will be issued after the expiration of five years from confirmation of the application, if the holder has complied with all required conditions. The holder of a conditional purchase, or conditional purchase and conditional lease, or homestead selection, or homestead grant, or conditional purchase lease, under certain conditions, may convert such holding into a homestead farm. A homestead farm may be protected against sale for debt in certain circumstances. Under certain conditions, a homestead farm may be converted into a conditional purchase lease or into a conditional purchase, with or without a conditional lease. A homestead farm, which is a conversion of a settlement purchase under provision now repealed, may be reconverted into a settlement purchase.

Applications received for homestead farms and those dealt with during the last ten years are as follow :—

Year ended 30th June.	Applications.				Created by Conversion from other tenures.		Reversal of forfeiture and increased area.		Less— Forfeited, decrease in area, and con- versions into other tenures.		Homestead Farms in existence at end of year.	
	Received.		Confirmed.									
	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.		acres.		acres.		acres.
1912	145	93,254	46	27,815	...	...	...	...	...	...	46	27,815
1913	400	217,186	356	203,365	19	10,041	...	...	...	...	421	241,221
1914	468	284,640	358	221,576	9	7,337	...	...	32	19,635	756	450,499
1915	605	467,873	437	327,098	11	4,550	1	210	50	33,439	1,155	748,918
1916	372	281,685	348	252,166	6	3,848	...	...	57	35,479	1,452	969,453
1917	271	181,722	167*	115,259	2	1,209	2	486	75	49,722	1,548	1,036,685
1918	245	186,853	158*	89,020	...	...	4	2,783	82	46,866	1,628	1,081,622
1919	498	572,713	339*	383,833	3	1,602	4	2,379	107	58,824	1,867	1,410,612
1920	840	989,884	491*	507,417	5	3,211	1	857	76	32,988	2,288	1,889,109
1921	573	562,797	449*	437,713	1	151	2	1,056	69	31,181	2,671	2,206,848

\* Includes 82 original farms of 61,476 acres for Returned Soldiers in 1916-17; 51 of 86,208 acres in 1917-18, 164 of 275,011 in 1918-19, 273 of 315,520 in 1919-20, and 194 of 244,293 in 1920-21. Three applications for additional areas of 526 acres were also confirmed in 1917-18, 7 applications for 3,413 acres in 1918-19, 10 for 13,078 acres in 1919-20, and 5 for 2,273 acres in 1920-21.



*Suburban Holdings.*

The conditions of perpetual rent and five years' residence are attached to suburban holdings. The area of a suburban holding is determined by the Minister for Lands; the rent—minimum 5s. per annum—is calculated at the rate of  $2\frac{1}{2}$  per cent. of the capital value, to be appraised for each period of twenty years. Males under 16 years, and females under 18 years, are disqualified from applying. A married woman may, in certain cases, apply, provided her husband has not acquired a suburban holding. A suburban holding may be protected against sale for debt in certain circumstances, and may be purchased under certain conditions. After the expiration of five years from date of confirmation, and subject to fulfilment of all conditions, a perpetual lease grant will be issued.

Any suburban Crown lands, or Crown land within population boundaries, or within the Newcastle pasturage reserve, or any other Crown land, may be set apart for disposal by way of suburban holding.

The number of applications for, and confirmations of Suburban Holdings during the past ten years, were as under:—

Year ended 30th June.	Applications.		Confirmations.		Suburban Holdings in existence at the end of year.		Annual Rent.
	No.	Area.	No.	Area.	No.	Area.	
		acres.		acres.		acres.	£
1912	48	1,964	21	1,085	21	1,085	136
1913	548	12,704	373	8,730	388	9,731	1,146
1914	762	15,885	570	13,415	902	22,114	2,473
1915	563	10,499	477	9,299	1,311	30,717	3,495
1916	504	7,343	400	6,775	1,535	34,110	4,043
1917	299	4,300	230	2,937	1,662	36,631	4,246
1918	240*	4,576	186	3,318	1,815	38,643	4,381
1919	237*	4,792	183	3,226	1,945	41,227	4,670
1920	263*	5,668	181	4,073	1,826	40,198	4,401
1921	456*	11,340	282	6,764	1,995	45,475	4,830

\* Includes 3 of 71 acres, as additional to holdings in 1917-18, 23 for 252 acres in 1918-19, 29 for 714 acres in 1919-20, and 17 for 426 acres in 1920-21.

The suburban holdings at the end of years 1918 and 1919 include those in respect of which purchase had been approved, viz., 11 of 289 acres, capital value, £915 in 1918, and 136 of 2,057 acres, capital value £12,035 in 1919. But the figures for 1920 exclude 259 holdings of 4,252 acres, capital value £23,207 approved for purchase, and 31 holdings of 388 acres for which deeds had been issued; and those for 1921 exclude 302 holdings of 4,781 acres approved for purchase. No rent is chargeable on these holdings, the principal with interest at the rate of  $2\frac{1}{2}$  per cent. per annum on the balance being paid by annual instalments extending over a period of 10 years.

*Week-end Leases.*

This tenure, created by the Crown Lands Amendment Act, 1916, is a lease in perpetuity, and is subject to payment of rent at the rate of  $2\frac{1}{2}$  per cent. of the capital value, to the effecting of substantial improvements worth £1 per acre within five years from confirmation, and to the performance of such special conditions as may be notified. Residence is not necessary. The minimum rent is £1. Any adult (except a married woman not judicially separated) may apply.

Persons who already hold land within areas defined in a notification setting apart the land for week-end leases, are generally disqualified.

Transfers may be made at any time with the Minister's consent, but must be to a qualified person, except in cases of devolution under a will or intestacy. The consideration for a transfer must not exceed the capital value of the improvements on the land. Week-end leases, on approval by the Minister, may be purchased, and payment must be made within 3 months from date of demand, or within such further period as the Minister may allow.

During the year ended 30th June, 1921, 60 applications for 127 acres were received, and confirmation was made in the case of 46 for an area of 159 acres at an annual rental of £47. At 30th June, 1921, these leases numbered 105, of an area of 418 acres, and annual rental £112. In addition, deeds of purchase had been issued for 10 leases of 26 acres 0 roods 33 perches, and approval to purchase granted in the case of 3 leases of 21 acres 2 roods 2 $\frac{3}{4}$  perches.

#### *Leases of Town Lands.*

Crown lands within the boundaries of any town may be leased by public auction or by tender. The lease is perpetual, and the area included must not exceed half an acre. The amount bid at auction or offered by tender (not being less than the upset value) is the capital value on which the annual rent at the rate of 2 $\frac{1}{2}$  per cent. is based for the first period of twenty years. The capital value for each subsequent twenty years' period is determined by the Land Board.

The lease may contain such covenants and provisions as may be gazetted prior to sale or tender. Residence is not necessary.

No person is allowed to hold more than one lease, unless with the permission of the Minister on recommendation by the Land Board. The holder of a town lease may be allowed to purchase.

In the year 1920-21, 123 lots representing 41 acres 0 roods 35 $\frac{3}{4}$  perches were either sold at auction or tenders for were accepted, the annual rent realised being £167 ls. 6d. After-auction tenders were received and accepted for 31 lots of an area of 10 acres 0 roods 35 $\frac{1}{2}$  perches, and annual rental of £11 11s. On 30th June, 1921, there were 206 leases, containing 70 $\frac{3}{4}$  acres, the annual rental being £225 11s. 3d.

#### SETTLEMENT OF RETURNED SOLDIERS.

Under the Returned Soldiers' Settlement Acts, special provision is made for the settlement of discharged soldiers on Crown Lands, including the Murrumbidgee Irrigation Areas, and on lands acquired under the Closer Settlement Acts and otherwise.

Land is made available under one or other of the following tenures:—

1. Homestead Farm.—Lease in perpetuity.
2. Crown Lease.—Lease for 45 years.
3. Returned Soldiers' Special Holding.—Purchase or lease.
4. Suburban Holdings.—Lease in perpetuity.
5. Irrigation Farm.—Lease in perpetuity.
6. Group purchase.

In addition, discharged soldiers may purchase privately-owned land upon terms approved by the Minister for Lands, and the Government will provide the whole of the purchase money, the only restriction being that the transaction must provide additional settlement, as, for instance, in the way of

subdivision, not merely by the replacement of one settler by another. The maximum value of land and improvements which may be so purchased is £3,000; in special cases, however, this may be increased to £3,500 or £4,000 for purely grazing areas.

An advance not exceeding £625 may be made available for each soldier settler, but it must be used only for the general improvement of the land, purchase of implements, stock, seed, and other necessities, or in the erection of buildings.

Terms of repayment are usually as follows:—

House and other Permanent Improvements.—By payments over 25 years, interest only being charged during first five years.

Stock and Implements.—Six years, interest only being charged during first year.

Seeds, Plants, &c.—One year.

Interest as fixed under the Acts may not exceed  $3\frac{1}{2}$  per cent. for the first year and 4 per cent. for the second year, and it increases progressively by not more than  $\frac{1}{2}$  per cent. for each subsequent year, the maximum rate being  $5\frac{1}{2}$  per cent.

If the circumstances so warrant, sustenance may be obtained for a period not exceeding six months, the rates being:—

For a Single Man.—£1 per week inclusive of pension.

Married Man.—£1 10s. per week, plus 2s. 6d. for each child (up to 4) under 16 years of age (inclusive of pension).

Subject to such conditions as to security and terms of repayment as the Commission may think fit to impose, soldier settlers on the Murrumbidgee Irrigation Areas may obtain an advance, or have payment of rent and water rates suspended.

These advances will be made irrespective of the general advance of £625, which is made to all soldier settlers.

Details of the settlement of discharged soldiers on the land up to 30th June, 1921, under the special provisions noted, are shown below. It should be remembered, however, that many soldiers have taken up land upon areas not specially set apart for returned soldiers, and are not included herein:—

#### *Returned Soldiers—Special Holdings.*

During the year 1920-21 confirmation was made in respect of 46 holdings for 4,872 acres, and there were in existence at the 30th June, 1921, 279 holdings of 20,118 acres. In addition to the above, purchase had been completed and deeds issued in the case of 6 holdings of 3 acres; and approval to purchase granted, in respect of 27 holdings of 505 acres.

#### *Homestead Farms.*

	Original Areas.		Additional Areas.
	No.	acres.	acres.
Confirmed, year ended 30th June, 1917 ... ..	82	64,476	.....
"      "      "      1918 ... ..	51	36,208	526
"      "      "      1919 ... ..	164	275,011	3,413
"      "      "      1920 ... ..	273	315,520	13,078
"      "      "      1921 ... ..	194	244,393	2,273
Total ... ..	764	935,608	19,290

*Crown Leases.*

	Original Areas.		Additional Areas.
	No.	acres.	acres.
Confirmed to 30th June, 1917 ... ..	40	99,885	.....
„ year ended 30th June, 1918 ... ..	21	66,197	.....
„ „ „ 1919 ... ..	36	83,943	10,311
„ „ „ 1920 ... ..	61	171,882	381
„ „ „ 1921 ... ..	29	70,440	1,606
Total ... ..	187	492,347	12,298

*Irrigation Farms.*

	Murrumbidgee.		Wentworth.		Total.	
	No.	acres.	No.	acres.	No.	acres.
Granted to 30th June, 1919 ... ..	6	347	7	72	13	419
Year 1919-20 ... ..	315	17,381	...	...	315	17,381
„ 1920-21 ... ..	130	6,232	...	...	130	6,232
Total ... ..	451	23,960	7	72	458	24,032

The number of estates purchased by the Government for soldiers' settlement up to 30th June, 1921, was as follows :—

	No. of Estates.	Area.	Value.
		acres.	£
By direct purchase ... ..	38	266,911	467,253
Under Crown Lands Act ... ..	35	46,119	236,319
Closer Settlement Fund ... ..	26*	400,165	1,828,492
Total ... ..	99	713,195	2,532,064

\* Includes two estates which had been acquired, but purchase not finalised at the end of the year.

The figures shown above under the head of Closer Settlement Fund relate only to estates subdivided as group settlements. Many more estates have been acquired for returned soldiers under the promotion sections of the Closer Settlement Act.

The number of returned soldiers who had been placed upon the land up to 30th June, 1921, in New South Wales through the agency of the State's machinery in connection with the repatriation scheme was 6,703, including 459 on private holdings who have received financial assistance under the provisions of the Returned Soldiers' Settlement Acts.

**MURRUMBIDGEE IRRIGATION AREAS.**

The disposal of lands within these irrigation areas is regulated by the Crown Lands Consolidation Act, 1913, and the Irrigation Act, 1912. These areas are administered by the Water Conservation and Irrigation Commission. A special land board, with the powers and duties of a local land board, has been appointed in connection with certain provisions of the Crown Land Acts relating to lands within an irrigation area; the lands are classified as town, irrigable, and dry or non-irrigable lands. A person (except a married woman not separated from her husband by

judicial decree) 16 years or over, if a male, or 18 years or over, if a female, or two or more such persons, may apply for an irrigation farm or block. An alien is not barred, but he must become naturalised within three years under penalty of forfeiture. The title is perpetual lease, subject to perpetual payment of rent and performance of residence. The rent is at the rate of  $2\frac{1}{2}$  per cent. of the capital value—minimum for town land blocks, £1 per annum. At the expiration of five years after the granting of the application, a grant of the farm or block will be issued to the holder, provided that the required conditions have been observed. The holding may be protected against sale for debt in certain circumstances.

In respect of town land blocks, the conditions of residence are not imposed, and no person may hold more than three adjoining blocks for residence, or four adjoining blocks for business purposes.

On the 30th June, 1921, 1,361 farms were held, representing a total area of 75,974 acres. In addition 543 Town Lands Blocks were held.

Irrigation settlements have been established also at Hay and at Curlwaa, near Wentworth. These were, in 1913, placed under the control of the Water Conservation and Irrigation Commission.

The Hay Irrigation Area consists of an area of 4,500 acres, and the Curlwaa Area 10,600 acres. Practically the whole of these areas are under occupation.

#### ALIENATED AREA.

From the early days of settlement until the year 1861 the Crown disposed of land, under prescribed conditions, by grants and by sales, so alienating, by the end of 1861, an aggregate area of 7,146,579 acres, made up as follows:—

	acres.
1. By grants, and sales by private tender to close of 1831 ... ..	3,906,327
2. „ „ in virtue of promises of early Governors made prior to 1831, from 1832-40 inclusive ... ..	171,071
3. „ sales at auction, at 5s., 7s. 6d., and 10s. per acre, from 1832-38 inclusive ... ..	1,450,508
4. „ „ „ „ 12s. and upwards per acre, at Governor's discretion, from 1839-41 inclusive ... ..	371,447
5. „ „ „ „ 20s. per acre, from 1842-46 inclusive ... ..	20,250
6. „ „ „ and in respect of pre-emptive rights, from 1847-61 inclusive ... ..	1,219,375
7. „ grants for public purposes, grants in virtue of promise of Governor made prior to the year 1831, and grants in exchange for lands resumed from 1841-61 inclusive ... ..	7,601
Total area alienated on 31st December, 1861 ... ..	7,146,579

The figures relating to land alienation, under the legislation of 1861, and to its subsequent amendments, show that up to 30th June, 1921, 14,941,228 acres had been sold by auction and other forms of sale.

The total area alienated by volunteer land orders to 30th June, 1921, amounted to 172,198 acres. Free grants ceased as from 31st January, 1912.

From 1862 to 30th June, 1921, the Crown dedicated 241,418 acres for public and religious purposes, the dedications during the last year covering 501 acres.

The area and the purposes for which land was dedicated during 1920-21 were as follows:—

Area.				Area.			
	a.	r.	p.		a.	r.	p.
Baby Clinic ... ..	0	0	16½	Public Roads ... ..	149	1	32½
Bowling Green ... ..	1	0	15½	Public Schools ... ..	94	0	35
Drinking Fountain ... ..	0	0	12½	Racecourse ... ..	100	0	0
Fire Brigade Station Site ... ..	0	0	16½	Sailors' Home ... ..	0	1	25¾
General Cemetery ... ..	52	1	15½	Show Ground ... ..	35	0	21
Girls' Public High School ... ..	1	1	0	Town Hall Site ... ..	0	0	26¾
Hospital for the Insane ... ..	8	2	30	Water Supply ... ..	10	1	23
Literary Institute ... ..	0	3	18				
Public Hall ... ..	0	2	21½	Total ... ..	501	2	3¾
Public Recreation ... ..	46	2	14½				

The foregoing areas are inclusive of various tenures within the Federal Capital Territory, aggregating approximately 173,451 acres, which will be subject to modification when the territorial boundaries shall have been surveyed.

The operations of the various Orders, Regulations, and Acts of Council and of Parliament for the disposal of the public lands, since the foundation of New South Wales, have produced the following results:—

Area granted and sold by private tender and public auction at prices ranging from 5s. to 20s. per acre, prior to the year 1862 ... ..	acres.	7,146,579
Area sold by auction and other forms of sale, 1862 to 30th June, 1921, inclusive ... ..		14,941,228
Area sold under system of conditional purchase for which deeds issued, 1862 to 30th June, 1921, inclusive ... ..		19,228,810
Area granted under Volunteer Land Regulations of 1867 ... ..		172,198
Area dedicated for public and religious purposes, less resumptions, 1862 to 30th June, 1921 ... ..		241,418
Homestead selections and grants existing on 30th June, 1921 ... ..		895,330
Homestead Farms ... ..		2,296,848
Suburban holding purchases ... ..		388
Returned Soldiers' Special Holding purchases ... ..		3
Week-end lease purchases ... ..		26
Suburban Holdings under perpetual rent ... ..		45,475
Returned Soldiers' Special Holdings under lease ... ..		20,118
Lands (acquired and Crown) alienated for Closer Settlement to 30th June, 1921 ... ..		1,970,511
<b>Less—</b>		<b>46,958,932</b>
Alienated and dedicated lands within Federal Capital Territory.. ... ..	acres.	173,451
Area acquired for Closer Settlement, to 30th June, 1921 ... ..	1,946,279	
		<b>2,119,730</b>
<b>Total area alienated, 30th June, 1921 ... ..</b>		<b>44,839,202</b>
Area in process of alienation under system of conditional purchase standing good on 30th June, 1921 (exclusive of Federal Capital Territory) ... ..		18,672,521
Area of Suburban Holdings approved to purchase ... ..		4,781
Area of Returned Soldiers' Special Holdings approved to purchase ... ..		505
Area of Week-end leases under process of alienation ... ..		22
<b>Total area alienated, and in process of alienation on 30th June, 1921 (exclusive of Federal Capital Territory) ... ..</b>		<b>63,517,031</b>

It is not possible to separate the area alienated by grant from that sold by private tender, as the records of early years are incomplete upon this point.

Under the provisions of the Crown Lands Amendment Act, 1912, the holder of a settlement purchase under the Closer Settlement Acts other than those acquired under the Closer Settlement Promotion Act, 1910, was permitted, under certain conditions, to convert such holding into a homestead farm. The Crown Lands Amendment Act, 1917, withdraws this right, and

provides that those conversions already made may be re-converted into settlement purchase tenures.

The progress of alienation and of conditional settlement by purchase and lease at various periods from 1861 to 30th June, 1921, is shown in the following table :—

Year.	Area Alienated to end of year.	Area Conditionally Purchased, standing good at end of year.	Total area alienated and in course of alienation.	Area under Leases with right to convert. (See page 882.)	Total Area placed beyond State control.
	acres.	acres.	acres.	acres.	acres.
1861	7,146,579	...	7,146,579	...	7,146,579
1871	8,630,604	2,280,000	10,910,604	...	10,910,604
1881	22,406,746	12,886,879	35,293,625	...	35,293,625
1891	23,775,410	19,793,321	43,568,731	11,234,131	54,802,862
1901	27,934,627	20,044,703	47,979,330	13,980,942	61,960,272
1906	33,470,512	16,499,823	49,970,335	15,807,249	65,777,584
1911	38,501,167	15,614,036	54,115,203	25,352,311	79,467,514
1916	41,172,383	18,315,095	59,487,478	22,044,506	81,531,984
1917	41,549,337	18,693,429	60,242,766	21,124,423	81,367,189
1918	41,794,364	19,225,738	61,020,102	20,554,771	81,574,873
1919	42,641,451	19,435,807	62,077,258	20,115,919	82,193,177
1920	43,755,427	19,370,134*	63,125,561	19,848,301	82,973,862
1921	44,839,202	18,677,829*	63,517,031	19,385,919	82,902,950

\* Includes purchases of Suburban Holdings, Returned Soldiers' Special Holdings, and Week-end leases.

#### CONVERSION OF TENURES.

In reference to the various methods of acquisition and occupation, details have been given of provisions of the Crown Lands Amendment Acts, passed in 1908 and 1912, which confer on certain holders of Crown lands the right of conversion into more desirable tenures. The following statement shows the number and area of holdings, application to convert which was confirmed during the year 1920-21 :—

Class of Holding of which Conversion Confirmed.	New Tenure Granted.														Total Confirmations.	
	Conditional Purchase.		Con- ditional Purchase and associated Con- ditional Lease.		Con- ditional and Con- ditional Purchase Leases.		Home- stead Selection.		Settle- ment Lease.		Home- stead Farm.					
	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.		
		acres.		acres.		acres.		acres.		acres.		acres.		acres.		
Conditional Leases ..	933	338,633	..	..	..	..	..	..	..	..	..	..	933	338,633		
Conditional Purchase Leases ..	44	17,738	..	..	..	..	..	..	..	..	..	..	44	17,738		
Conditional Purchase Homestead Selections or Grants ..	105	33,843	14	27,263	2	958	..	..	..	..	..	..	121	62,064		
Settlement Leases ..	13	20,862	29	94,190	1	2,788	..	..	..	..	..	..	43	117,830		
Non-residential Conditional Purchases ..	4	343	..	..	..	..	..	..	..	..	..	..	4	343		
Special Leases ..	378	49,390	2	1,603	30	6,818	10	1,489	3	2,894	1	151	424	62,351		
Scrub Leases ..	..	..	..	..	..	..	3	6,640	..	..	..	..	3	6,640		
Improvement Leases ..	..	..	..	..	..	..	10	28,857	..	..	..	..	10	28,857		
Crown Leases ..	74	28,507	28	46,961	1	510	..	..	..	..	..	..	103	75,978		
Homestead Farms ..	47	12,555	5	4,733	..	..	..	..	..	..	..	..	52	17,288		
Total ..	1,598	501,861	78	174,756	34	11,074	23	36,986	3	2,894	1	151	1,737	727,722		

\* Includes 78 associated Conditional Leases, 123,179 acres.  
Lease, 94 acres.

† Includes 1 Conditional Purchase

## OCCUPATION OF PASTORAL LANDS—LIMITED TENURE.

The pastoral lands of New South Wales have been occupied under various systems of tenure. In the early days land was held for grazing by virtue of tickets of occupation, the issue of which was stopped in 1827, when holders of such lands were required to pay a quit-rent of 20s. per 100 acres per annum, and to vacate the land at six months' notice. The necessity for depasturing increasing flocks induced settlers to extend their occupation to Crown lands without any right except that of first discovery, until the Legislature, in 1833, passed an Act protecting Crown lands from intrusion and trespass, Commissioners being appointed to safeguard the interests of the State.

Many subsequent enactments have been made, and a summary of the leading features of the principal Acts appeared in the 1919 issue of this Year Book.

All existing original as well as amended and unrepealed portions of the various Acts dealing with the alienation, occupation, and management of Crown Lands were consolidated in the Crown Lands Consolidation Act, 1913. The Crown Lands (Amendment) Act, 1917, which came into force on 1st January, 1918, provided for conversion of certain tenures and modified the conditions relating to certain holdings particularly in regard to residence. It also amended the existing Acts in other respects.

*Annual Leases.*

Unoccupied lands, not reserved from lease, may be obtained for pastoral purposes as annual leases, on application, or they may be offered by auction or tender. They may be obtained also by "after auction" tender, or "after tender" tender. No conditions of residence or improvement are attached to annual leases, which convey no security of tenure, the land being alienable by conditional purchase, auction sale, etc. The area in any one lease is restricted to 1,920 acres. In certain circumstances an annual lease may be converted into a lease under improvement conditions for a term not exceeding ten years.

The number of annual leases current at 30th June, 1921, was 5,650, embracing 2,409,661 acres, with an annual rent of £20,506.

*Conditional Purchase Leases.*

This form of tenure was created in 1905; but, as in the case of homestead selections and settlement leases, it is obsolete for the purposes of selection, as lands are not now made available under it. There are, however, considerable numbers of conditional purchase leases still standing.

No applications were received for original leases, only four of 1,630 acres being received for additional conditional purchase leases during the year 1920-21; and two original leases of 623 acres and one additional of 821 acres were confirmed. One application for 200 acres for a special conditional purchase lease was also received, and none were confirmed during the year. One lease of 94 acres was converted from another tenure. The increase in area amounted to 4 acres. Forty-four leases of 17,738 acres were converted into conditional purchases, and there was a decrease in areas of 3 acres. The leases holding good at 30th June, 1921, numbered 500 with an area of 368,669 acres, the rent amounting to £12,578.

*Special Conditional Purchase Leases.*

Under the Crown Lands Act, 1908, land might be set apart for disposal as special conditional purchase lease, provided that for six months the land had been available for some class of residential holding. The areas must be not less than 20, nor more than 320 acres. There were no conditions of residence,



but substantial improvements of value of £1 per acre, or any lesser value not being less than 10s. per acre, must be completed within three years. Although no lands are now set apart for special conditional purchase lease, there are areas still available for application in certain districts.

One application for an area of 200 acres was received during 1920-21, and none were confirmed.

#### *Conditional Leases.*

A conditional lease may be obtained by any holder of a conditional purchase (other than non-residential), or a conditional purchase within a special area in the Eastern Division. Lands available for conditional purchase are also available for conditional lease, with the exception of lands in the Western Division, or within a special area or a reserve.

Applications must be accompanied by a provisional rent of 2d. per acre and a survey fee, except where otherwise provided. The area which an applicant may obtain as conditional purchases and conditional leases is restricted to 1,280 acres in the Eastern Division, and 2,560 acres in the Central Division; but the Land Board may permit specifically larger areas. The area that may be leased is limited to three times the area of the conditional purchase in virtue of which it is obtained. The lease is for a period of forty years, at a rent determined by the Land Board, payable yearly in advance. The conditions of fencing, or substitution of improvements in lieu of fencing, which attach to a residential conditional purchase, apply equally to a conditional lease, and residence is required as in the case of an additional conditional purchase.

After confirmation, a conditional lease may be converted, either wholly or in part not less than 40 acres, into a conditional purchase.

Applications for 309 leases, of an area of 133,456 acres, were lodged during 1920-21, and 291, including applications outstanding from the previous year, representing 93,930 acres, were confirmed.

Conditional leases, to the number of 933, embracing 338,633 acres, were converted into conditional purchase, and conditional leases containing an area of 134,159 acres, were created by conversion. Leases in existence at 30th June, 1921, numbered (gazetted) 24,101, embracing 14,149,642 acres, rent £192,694, and not gazetted (under provisional rent), 338 leases of 137,897 acres, and rent £1,149.

#### *Leases of Scrub and Inferior Lands.*

Scrub leases may be obtained by application, by auction, by tender, by after-auction tender, or by after-tender tender, but inferior-lands leases may be acquired only by auction or by tender, after-auction tender, or after-tender tender. There is no limitation as to area, and in the case of a scrub lease obtained by application the rent is appraised by the Local Land Board. The initial rent of an inferior-lands lease prevails throughout the whole term; but the terms of a scrub lease may be divided into periods, the rent for each period being determined by reappraisal. The term of each class of lease may not exceed twenty-eight years. The holder of a scrub lease must take such steps as the Land Board may direct for the purpose of destroying the scrub, and keep the land clear afterwards. During the last year of any of the leases application may be made for a homestead grant of an area not in excess of a home-maintenance area.

There were in existence at 30th June, 1921, 217 scrub leases with an area of 1,502,434 acres, and rental of £5,948, and 28 inferior land leases, embracing 69,710 acres, and rent, £254.

*Occupation Licenses.*

Occupation licenses may be (a) preferential occupation licenses, consisting of the area within the expired pastoral leases, and (b) ordinary occupation licenses, which relate to the parts of the holdings formerly known as resumed areas. They may be acquired by auction or tender, after-auction tender, or after-tender tender. Occupation licenses extend from January to December being renewable annually at a rent determined by the Land Board.

The area under occupation license (Crown Lands Act) was represented at 30th June, 1921, by ordinary 622 of 3,191,614 acres, rental £6,956; and preferential 299 leases, representing 738,554 acres, and rent, £2,957.

*18th Section and Pastoral Leases.*

Under the Crown Lands Amendment Act of 1903, the registered holder of any pastoral lease, preferential occupation license, or occupation license, could apply for a lease, for not more than twenty-eight years, of an area not exceeding one-third of the total area of the land comprised within the lease or license, subject to such rent, conditions of improvement, and withdrawal for settlement as may be determined. These are known as 18th Section Leases, having been granted under Section 18, Act of 1903, which has now been repealed.

At 30th June, 1921, these leases, also known as "Leases to Outgoing Pastoral Lessees," numbered 97, with an area of 569,425 acres, and rental of £4,778. There were no pastoral leases in existence on 30th June, 1921, in the Western Division, which had not been brought under the provisions of the Western Lands Act.

*Special Leases.*

Special leases are issued chiefly to meet cases where land is required for some industrial or business purpose, and may be obtained by application, auction, or otherwise, the term of the lease not to exceed twenty-eight years. The conditions attached are suitable to the circumstances of each case, being, like the rent, determined by the Minister. The Crown Lands Act, passed in 1908, provides for the conversion of special leases for certain purposes, and of agricultural or pastoral Church and School lands leases, into original or additional conditional purchase leases; or original or additional conditional purchases; or original or additional homestead selections; or original or additional settlement leases; or conditional leases; or homestead farms.

The number of special leases granted during 1920-21 numbered 720 of 112,234 acres; and 424 leases, representing 62,351 acres, were converted into other tenures. After allowance has been made for leases which were terminated, were forfeited, surrendered, etc., and those which expired by effluxion of time, 7,013 leases (exclusive of leases within the Commonwealth territory) with an area of 743,049 acres and rental of £38,033, were current at 30th June, 1921.

*Residential Leases.*

The holder of a "miner's right" within a gold or mineral field may obtain a residential lease. A provisional rent of 1s. per acre is charged, the maximum area is 20 acres, and the longest term of the lease twenty-eight years; the annual rent is appraised by the Land Board. The principal conditions of the lease are residence during its currency, and the erection within twelve months of necessary buildings and fences. Tenant-right in improvements is conferred upon the lessee. The holder of any residential lease may apply after the first five years of his lease to purchase the land.

There were 930 leases embracing 12,991 acres and a rental of £1,670 current at 30th June, 1921.

*Improvement Leases.*

Improvement leases may consist of any scrub or inferior land not suitable for settlement in the Eastern or Central Divisions, and are obtained only by auction or tender, after-auction tender, or after-tender tender. The rent is payable annually, and the lease is for a period of twenty-eight years, with an area not exceeding 20,480 acres. Upon the expiration of the lease the last holder will have tenant-right in improvements. During the last year of the lease the lessee may apply for a homestead grant of an area not in excess of a home maintenance area, including the area on which his dwelling-house is erected. Should the Advisory Board, constituted under the Closer Settlement Act, 1907, report that land comprised in an improvement lease or scrub lease is suitable for closer settlement, the Minister may resume the lease, the lessee being compensated.

During 1920-21, 1 lease, comprising 4,045 acres, was let by tender at a total rental of £5, and no leases were, under improvement conditions, granted. Ten improvement leases were converted into homestead selections. After allowance has been made for leases, which were forfeited, voided, surrendered, expired and resumed, there remained current at 30th June, 1921, 731 leases with an area of 3,288,555 acres and rental £22,586.

*Settlement Leases.*

Under this tenure, which now has been superseded practically by that of Crown lease, farms gazetted as available for settlement lease were obtainable on application, accompanied by a deposit consisting of six months' rent and at least one-tenth of survey fee.

Under the Crown Lands Act of 1908, the holder of a settlement lease may convert such lease into a conditional purchase, or into a conditional purchase and conditional lease under certain provisions, but the area of the land to be converted into conditional purchase may not exceed a home-maintenance area.

During 1920-21, no applications were received for original lease, and 10 applications for additional leases relating to 14,936 acres were lodged. Eight applications of 10,430 acres were confirmed. Three settlement leases of 2,894 acres were created by conversion, and 43 leases for an area of 117,830 acres were converted into other tenures. After making allowance for leases forfeited, etc., and subdivision, there remained current at 30th June, 1921, 1,471 leases, comprising 3,973,171 acres, and rent, £54,526.

*Snow Leases.*

Vacant Crown lands which for a portion of each year are usually covered with snow, and are thereby unfit for continuous use or occupation, may be leased by auction or tender, by after-auction tender, or by after-tender tender as snow leases. Not more than one snow lease may be held by the same person. The maximum area is 10,240 acres. The term of the lease is seven years, but may be extended for three years.

At 30th June, 1921, there were 20 leases current, embracing 129,020 acres; and rent, £1,137.

*Crown Leases.*

Crown leases were constituted under the Crown Lands Amendment Act, 1912, and lands are specially set apart by notification in the *Gazette* as available for Crown lease. Crown lands available for conditional purchase (unless otherwise specified in the *Gazette*) are also available for Crown lease. Land may be set apart for Crown lease to be acquired only as additional holdings. The term of lease is forty-five years, and the annual rent  $1\frac{1}{4}$  per

cent. of the capital value, as determined every fifteen years. The rent payable for the first year may be remitted if, in addition to the improvements required as a condition of the lease, an equal sum be spent by the lessee in improving the land. The lessee is required to reside on the land for five years, and during the last five years of the lease, unless debarred by notification setting the land apart, may apply to convert into a homestead farm so much of the land as will not exceed a home-maintenance area. Under certain conditions, conversion may also be made into a conditional purchase, with or without a conditional lease. The lease may be protected against sale for debt in certain circumstances. Any person qualified to apply for a homestead farm may apply for a Crown lease.

Operations under this class of lease during the past ten years were as follow :—

Year ended 30th June.	Application.		Confirmed.		Leases current at 30th June.		
	No.	Area.	No.	Area.	No.	Area.	Rent.
		acres.		acres.		acres.	£
1912	116	311,360	54	168,392	54	168,392	1,588
1913	477	554,424	278	390,096	330	555,864	5,621
1914	836	697,425	493	356,727	805	880,785	9,259
1915	628	643,189	598	487,155	1,600	1,563,684	16,114
1916	571	864,158	501	780,373	1,760	1,896,765	21,561
1917	541	595,409	445*	441,313	2,033	2,134,446	24,845
1918	463	500,386	291*	285,248	2,337	2,449,587	28,292
1919	628	934,072	313*	341,324	2,565	2,694,879	31,303
1920	1,039	1,399,270	419*	593,554	2,841	3,092,904	34,521
1921	686	790,926	548*	671,247	2,186	3,664,798	38,512

\* Includes 40 original leases of an area of 99,885 acres, and annual rental of £1,448, for returned soldiers in 1917; 21 of 66,197 acres, and rental £948, in 1918; 36 of 83,943 acres, and rental £1,190, in 1919; 61 of 171,882 acres, and rental £1,654, in 1920; and 29 of 70,440, and rental £619, in 1921. In addition to these, additional areas were confirmed for 10,311 acres and rental £145, in 1919; 381 acres, rental £4, in 1920; and 1606 acres, rental £14, in 1921.

#### *Church and School Land Leases.*

Certain grants were made under special enactments, and instructions from the Imperial authorities to Sir Thomas Brisbane, then Governor (1821-25), directed him to reserve one-seventh of the Crown lands in each county for Church and School purposes.

The aggregate area of such reserves up to the year 1832, shown by survey to be actually 454,050 acres, did not attain the proportional area specified in the instructions. These lands were administered by the Clergy and School Land Corporation until its abolition by Order of Council on the 4th February, 1833, when the lands reverted to the Crown, and an agent was appointed to determine the claims of purchasers, to whom deeds of grant were made and confirmed by a subsequent Act of Council, dated the 5th August, 1834.

Of the reserves mentioned above, 171,746 acres were alienated up to the year 1880, when, by the Church and School Lands Dedication Act of that year, the balance of 282,304 acres came under the control of the State

Legislature to be administered for the purpose of Public Instruction. Subsequently the Church and School Lands Act, 1897, re-vested all these lands in the Crown, free from any trust or condition, but subject to the provisions of the Crown Lands Act of 1884 and its subsequent amending Acts, thus determining the land as Crown land. Until a notification classifying any area of Church and School lands has been published in accordance with the Crown Lands Act, such area may be dealt with only by reservation, dedication, license, or held under special or annual lease.

The total area of Church and School lands held under lease at 30th June, 1921, in the Eastern Division, was 11 acres, at a rental of £330 per annum, the subdivisions being as follow:—

	No.	Area. acres.	Rent. £
Agricultural ... ..	1	1	1
Ninety-nine Year ... ..	37	10	326
Total ... ..	38	11	327

In addition to the above, there was one water-race, extending about 10 miles, with a rental of £3.

Other leases in existence at 30th June, 1921, were as follow:—

Homestead leases in the Western Division not brought under the provisions of the Western Lands Act were 4, containing an area of 35,687 acres, and rent £55.

There were also 1 block-holder's lease, 1 acre, and rent £6; and 82 prickly-pear leases, embracing an area of 35,932 acres, with a rental of £433. Permissive occupancies in existence at the same date were 4,315, for an area of 1,878,675 acres, and rental £11,935.

In addition to the foregoing leases, there were at 30th June, 1921, exclusive of leases to mine on private lands, 224,423 acres, approximately, held under mineral and auriferous leases. Permits to mine under roads and reserves covered an area of 1,179 acres.

#### WESTERN DIVISION.

The administration of the Western Division under the Western Lands Acts, 1901 and 1905, is vested in three Commissioners, constituting "The Western Land Board of New South Wales," who, sitting in open Court, exercise all the powers conferred upon Local Land Boards by the Crown Lands Acts.

Subject to existing rights and extension of tenure granted under certain conditions, all forms of alienation (other than by auction) and lease prescribed by the Crown Lands Acts, ceased to operate within the Western Lands Division from 1st January, 1902.

The registered holder of a homestead selection or grant, pastoral, homestead, settlement, residential, special, artesian well, improvement, scrub, or inferior lease or occupation license of land in the Western Division, may apply to bring his lease or license under the provisions of the "Western Lands Acts of 1901 and 1905"; in cases where application has not been made, such lease or license is treated as if the Acts had not been passed.

Crown lands within this division are not available for lease until so notified in the *Gazette*, but leases for special purposes may be granted upon certain conditions, and holders of areas, which are considered too small to maintain a home or to make a livelihood, may obtain an additional area under certain conditions as a lease. Lands are gazetted as open for lease at a stated rental under specified conditions with respect to residence, transfer, mortgage, and sub-letting.

Holdings under the Western Lands Acts as at 30th June, 1921, were classified as follow :—

Class of Holding.	Leases issued.	Area.	Annual Rental.
	No.	acres.	£.
Pastoral Leases ... ..	298	37,497,443	59,704
Subdivision Leases... ..	4	890,270	1,094
Homestead Leases ... ..	1,114	10,338,446	27,238
Improvement Leases ... ..	115	1,939,133	1,156
Scrub Leases ... ..	3	17,431	31
Inferior Lands Leases ... ..	4	209,950	50
Settlement Leases ... ..	8	40,050	130
Artesian Well Leases ... ..	31	317,111	501
New Special Leases ... ..	309	560,995	1,625
Special Leases (Conversion) ... ..	49	9,278	236
Occupation Licenses ... ..	90	5,317,749	1,372
Homestead Selections and Homestead Grants	34	24,765	155
Section 32, Western Lands Act Leases... ..	293	2,814,341	2,604
Part VII, " "	540	13,427,206	14,512
Preferential Occupation Licenses ... ..	41	896,261	608
Permissive Occupancies ... ..	57	1,557,161	785
Conditional Leases ... ..	81	109,922	538
Total... ..	3,071	75,967,512	112,339

The area leased to pastoral tenants and others at the end of June, 1921, amounted to 113,093,099 acres (including leases to miners under the Mining Act); the leases were classified as follows:—

Type of Lease.	Area. acres.	Type of Lease.	Area. acres.
To outgoing Pastoral Lessees	569,425	Snow Land ... ..	129,020
Occupation License ... ..	3,930,168	Special ... ..	743,049
Conditional ... ..	14,287,539	Inferior Land ... ..	69,710
Conditional Purchase... ..	368,669	Western Lands ... ..	75,967,512
Homestead ... ..	35,687	Permissive Occupancy ...	1,878,675
Annual ... ..	2,409,661	Prickly Pear ... ..	35,932
Settlement ... ..	3,973,171	Mining Act ... ..	225,602
Improvement ... ..	3,288,555	Other ... ..	13,492
Scrub ... ..	1,502,434		
Crown ... ..	3,664,798		
		Total ... ..	113,093,099

The total available area of the State, including that of Lord Howe Island, and exclusive of 601,580 acres, revised area, ceded to the Commonwealth Government as Federal Capital Territory, is 198,036,500 acres. Deducting the area alienated, and in process of alienation, 63,517,031 acres, and the area leased, 113,093,099 acres, making a total of 176,610,130 acres, there remained a balance of 21,426,370 acres, representing the area of country neither alienated nor leased, and including roads, reserves for public purposes, travelling-stock routes and water.

The following statement shows the tenure under which the areas leased with right or provision to convert into freehold, under the Crown Lands (Amendment) Act of 1908, are held :—

	acres.
Conditional Leases ... ..	14,287,539
Conditional Purchase Leases ... ..	368,669
Settlement Leases ... ..	3,973,171
Special Leases ... ..	743,049
Residential Leases on Mineral Fields... ..	12,991
Church and School Land Leases ... ..	11
Week-end Leases ... ..	418
Town Land Leases ... ..	71
Total ... ..	19,385,919

The areas under long contracts of lease, in some cases with right of renewal, are given below :—

	acres.
Crown Leases ... ..	3,664,798
Leases to outgoing Pastoral Lessees ... ..	569,425
Homestead Leases ... ..	35,687
Scrub Leases and Inferior Land Leases ... ..	1,572,144
Snow-land Leases ... ..	129,020
Improvement Leases ... ..	3,288,555
Western Land Leases ... ..	68,196,341
Other Leases ... ..	261,535
Total ... ..	77,717,505

#### AREA AVAILABLE FOR SETTLEMENT.

As has been shown previously on page 854, the area which had been placed practically beyond State control at the end of June, 1921, was as follows :—

	acres
Area alienated ... ..	44,839,202
Area conditionally purchased standing good ... ..	18,677,829
Area under Lease with right to convert... ..	19,385,919
Total area placed practically beyond State control ... ..	82,902,950

Adding the 82,902,950 acres practically beyond State control, to the 77,717,505 acres of land leased on long contracts, a total of 160,620,455 acres is obtained showing the extent of territory which can now be more closely settled and intensely cultivated only by voluntary action of the holders, or by more systematic and probably costly resumptions. The balance is 37,416,045 acres; of this 2,969,080 acres represent the water area, and a considerable area, probably 3 or 4 million acres, must be deducted for roads and for useless land, leaving perhaps 31 million acres available for occupation under various tenures.

There is, however, a difficulty attending any calculation of the area included in land under long leases, which might be made available for settlement. This is apparent when the conditions under which the leases are now held are taken into consideration. Except where right to renewal on expiration of the lease exists, certain areas are continually reverting to the Crown by effluxion of time, and again in respect of certain leases provisions have been made whereby the Minister may at his discretion withdraw a part, and in some cases the whole, of a leased area, or he may resume such leases for the purposes of settlement.

#### AREAS FOR SETTLEMENT, 1920-21.

With a view to classifying and bringing forward those areas which are suitable for settlement, systematic inspections of Crown lands are made in each district. To meet the demand for land, 1,827,019 acres, including

780,106 acres for Returned Soldiers, were made available during the year 1920-21, for the classes of holdings specified below :—

	For Ordinary Settlement. acres.	For Returned Soldiers. acres.	Total. acres.
For Crown Lease ... ..	458,123	24,020	482,143
Homestead Farms ... ..	197,889	107,506	305,395
Suburban Holdings ... ..	10,794	498	11,292
Additional Holdings (ordinary) ... ..	232,555	...	232,555
Irrigation Farms and Allotments ... ..	2,699	5,831	8,530
Conditional Purchase (original) ... ..	1,148	...	1,148
Conditional Purchase and Conditional Lease ... ..	2,840	...	2,840
Homestead Selection (original) ... ..	250	...	250
Week-end Leases ... ..	317	...	317
Returned Soldiers' Special Holdings ... ..	...	2,191	2,191
Soldiers' Group Purchases ... ..	...	69,801	69,801
Settlement Purchases ... ..	7,941	724	8,665
Area acquired under Promotion provisions of the Closer Settlement Act ... ..	27,295	434,947	462,242
	941,851	645,518	1,587,369
Area gazetted prior to 30th June, 1921, but not available until after that date ... ..	105,062	134,588	239,650
Total ... ..	1,046,913	780,106	1,827,019

The total areas available for settlement under the various tenures on 30th June, 1921, were as follow :—

	For Ordinary Settlement. acres.	For Returned Soldiers. acres.	Total, acres.
For Crown Lease ... ..	1,561,970	11,620	1,573,590
Homestead Farms ... ..	61,870	472,939	534,809
Suburban Holdings ... ..	21,862	...	21,862
Conditional Purchase (Original) ... ..	4,063,556	...	4,063,556
Additional Holdings (Generally) ... ..	728,819	6,244	735,063
Week-end Leases ... ..	771	...	771
Town Lands Leases ... ..	97	...	97
Returned Soldiers' Special Holdings ... ..	...	1,365	1,365
Total ... ..	6,438,945	492,168	6,931,113

#### RESERVES.

The total area of reserved lands in the State as at 30th June, 1921, was 20,505,499 acres. A classification of reserves according to the purpose for which used is shown below :—

Class of Reserves.	Acres.
Travelling Stock ... ..	5,696,096
Water ... ..	821,726
Mining ... ..	1,349,695
Forest ... ..	3,559,114
Temporary Commons ... ..	467,554
Railway ... ..	84,035
Recreation and Parks ... ..	228,169
Pending Classification and Survey ... ..	4,325,440
For Conditional Purchase, within Gold-fields ... ..	672,320
Miscellaneous ... ..	3,301,350
Total ... ..	20,505,499

The extent of land reserved for timber conservation amounts to 3,559,114 acres; for routes and camping-places for travelling stock 6,035,448 acres have been reserved, 3,876,451 acres being in the Western Division; water reserves embrace 821,726 acres, of which 85,514 acres are in the Western Division.

Reserves are not necessarily unoccupied, and are in part held under Annual, Special, or Scrub Leases, occupation license, or permissive occupancy.



A revision of the reserved lands is being made in each Land District with the object of withdrawing from reserves any area the continued reservation of which is not required in the public interest.

#### LAND RESUMPTIONS.

Land required by the State may be obtained by resumption, purchase, exchange, surrender, or gift. Resumptions are those made under the Public Works and Lands for Public Purposes Acquisition Acts, and are treated by the Government Land Valuer, except those made for purposes of Public Instruction or of Railways. Resumptions under the Commonwealth Lands Acquisition Act, 1906-16, Lands Acquisition (Defence) Act, 1918, and War Service Homes Act, 1918-20, are also included.

The following statement shows the area of such resumptions and purchases which were made during the past five years:—

Year.	Resumptions and Purchases.			Gifts.			Total.		
	a.	r.	p.	a.	r.	p.	a.	r.	p.
1917	12,789	0	9	7	0	0	12,796	0	9
1918	3,774	0	33	17	0	32	3,791	1	25
1919	3,411	2	10	26	3	8	3,438	1	18
1920	27,840	1	22	17	2	2	27,857	3	24
1921	8,605	0	28	40	3	25	8,646	0	13

Resumptions and purchases, and the purposes thereof, during 1920-21 were:—

	Area.				Area.		
	a.	r.	p.		a.	r.	p.
Defence ... ..	1	0	10·50	Storm Water Channels and Drainage... ..	7	0	12·05
Harbour Improvements...	0	1	36·90	War Service Homes ... ..	69	1	39·97
Housing ... ..	4	3	1	Water Conservation and Irrigation ... ..	392	0	19·25
Municipal Streets and Improvements...	0	2	24·75	Water Storage and River Dam ... ..	422	0	29·50
Police Stations ... ..	17	2	2·05	Water Supply ... ..	2,358	0	27·80
Postal ... ..	0	1	5	Water Trusts ... ..	10	0	1
Public Hospitals ... ..	8	2	8	Wharfage ... ..	4	1	23·75
Public Parks ... ..	7	1	25·25	Total... ..	8,646	0	13·02
Public School Sites ... ..	231	3	3				
Railways and Tramways.	4,615	3	23·50				
Repatriation ... ..	0	3	25·75				
Sewerage ... ..	20	0	14				
State Forests ... ..	473	1	0				

#### REVENUE FROM PUBLIC LANDS, 1917-21.

The following statement shows the Revenue received from Public Lands during the years ended 30th June, 1917 to 1921, also the Revenue per capita:—

Head of Revenue.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	£	£	£	£	£
Auction and Special Sales ... ..	36,731	65,593	81,475	73,365	58,595
Conditional Purchases ... ..	941,153	1,008,893	978,448	1,052,338	1,191,166
Pastoral Occupation ... ..	484,882	495,994	482,361	481,106	541,419
Mining Occupation ... ..	130,018	130,431	144,662	137,955	158,313
Miscellaneous Land Receipts ... ..	161,398	152,524	174,939	211,805	249,165
Gross Revenue ... ..	£ 1,754,182	1,853,435	1,861,885	1,956,569	2,198,658
Refunds ... ..	£ 22,910	25,462	33,478	41,130	47,193
Net Revenue ... ..	£ 1,731,272	1,827,973	1,828,407	1,915,439	2,151,465

Head of Revenue.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
REVENUE PER CAPITA.					
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Auction and Special Sales ...	6 0 5	0 0 8	0 0 10	0 0 9	0 0 7
Conditional Purchases ...	0 9 11	0 10 6	0 9 11	0 10 4	0 11 5
Pastoral Occupation ...	0 5 1	0 5 2	0 4 11	0 4 8	0 5 2
Mining Occupation ...	0 1 5	0 1 4	0 1 6	0 1 4	0 1 6
Miscellaneous Land Receipts ...	0 1 8	0 1 7	0 1 9	0 2 1	0 2 4
Gross Revenue ...	£ 0 18 6	0 19 3	0 18 11	0 19 2	1 1 0
Refunds ...	£ 0 0 3	0 0 3	0 0 4	0 0 5	0 0 5
Net Revenue ...	£ 0 18 3	0 19 0	0 18 7	0 18 9	1 0 7

## CLOSER SETTLEMENT.

Under the Closer Settlement Act, 1901, provision was made for the acquisition of private lands, or of lands leased from the Crown, for purposes of closer settlement, but as power of compulsory resumption was not conferred, the Act was practically inoperative.

The Closer Settlement Act, 1904, repealed the 1901 enactment, and provided for compulsory resumption of private land for purposes of closer settlement when the value exceeded £20,000, exclusive of improvements, and owners could offer to surrender private lands at specified prices, such offer to be binding on the owner for a period of nine months. These provisions were repealed by the Closer Settlement (Amendment) Act, 1914.

The Closer Settlement Amendment Act, 1907, constituted Advisory Boards to report upon lands suitable for closer settlement, the land being purchased by agreement with the owner, or acquired by resumption when the value, without improvements, exceeded £20,000. Within six months after the passing of an Act sanctioning the construction of a line of railway, the Governor may notify a list of estates within 15 miles of a railway line; within six months of this notification the Governor may notify his intention to consider the advisableness of acquiring for purposes of closer settlement land so notified the property of one owner and exceeding £10,000 in value.

Land comprised in an improvement or scrub lease, or section 18 lease, may also be resumed or purchased under agreement for closer settlement upon the recommendation of an Advisory Board constituted under the Act of 1907.

Before land acquired is available for settlement, the areas and values per acre of the proposed settlement purchases must be approved by the Minister. The area available may include not only land acquired under the Act but also any adjacent Crown lands set apart for the purpose. Settlement Purchase areas are notified for disposal in farms of three classes, viz., agricultural lands, grazing lands, and agricultural and grazing lands.

In the Closer Settlement Amendment Act, 1909, provision is made that at any time after a proclamation of intention to consider the advisableness of acquiring an estate, if an agreement be made that the land shall be subdivided for closer settlement by the owner, the power of resumption may be suspended for a term not exceeding two years. Any sale or lease made under such agreement, and any subsequent sale, lease or transfer made within five years of the original sale or lease, must be

submitted to the Minister, and if it be found that the owner has failed to fulfil the conditions, the suspension of the power of resumption shall cease.

Males over the age of 16 years, and females over 21 years, may apply for land under the Act, if they are not holders, except under annual tenure, of land which, with the area sought, will substantially exceed a home-maintenance area; but if any person divests himself of land in order to apply for a settlement purchase, his application will be disallowed, unless the Minister's consent in writing be obtained to the making of an application. Ministerial consent is not, however, necessary in the case of a discharged soldier or sailor, who has at any time previously obtained a title to and held any other land, if he no longer holds the same.

The person applying, if a woman, must be unmarried or widowed, or if married, be living apart from her husband under a decree for judicial separation; but with the Minister's consent a married woman not living apart from her husband may apply for a settlement purchase, in which case the lands held by her husband will be considered in estimating whether the area held, together with that sought, substantially exceeds a home-maintenance area; and in considering any application by a married man not so living apart, the total area held by husband and wife will be similarly considered.

Unless otherwise prescribed or notified under the present regulation, applications, on or after the 1st September, 1917, accompanied by a deposit of  $6\frac{1}{2}$  per cent. of the notified capital value of the land, must be lodged with the Crown Land Agent of the district, or with any other officer duly appointed. The purchase money is payable in thirty-two annual instalments at the rate of  $6\frac{1}{2}$  per cent. of the capital value of the land, including interest at  $5\frac{1}{2}$  per cent. on the unpaid balance of purchase money. Where the settlement purchase is within a settlement purchase area notified prior to 1st January, 1913, the deposit and subsequent instalments are at the rate of 5 per cent. per annum, and the interest is at the rate of 4 per cent. per annum. Discharged soldiers or sailors are not, however, required to pay any deposit.

Residence for a period of five years is required, and commences at any time within twelve months after the decision of the Land Board allowing the purchase; but the term may be extended to any date within five years of the allowance of purchase, and on such terms and conditions as to improvement, cultivation, or otherwise, as may be arranged between the applicant and the Land Board. Residence implies continuous and *bona fide* living upon any farm or township settlement allotment in the same settlement purchase area. Subject to the approval of the Land Board, the condition as to residence may be observed in any adjacent town or village; or by permission may be suspended or remitted. Residence may be permitted on another holding (within reasonable working distance) subject to such conditions as may be imposed.

The purchaser is required to effect substantial and permanent improvements to the extent of 10 per cent. of the capital value within two years from the date of application, with an additional 15 per cent. within five years. Existing improvements on the land are held to fulfil this condition to the amount of their value. Every purchaser is subject to conditions as to mining, cultivation, destruction of vermin and noxious weeds, insurance of improvements against fire, etc.

The Minister may give consent to the temporary occupation, subject to certain conditions, of any lands within a settlement purchase area which remain unselected. The permit to occupy does not exempt the land from settlement purchase.

One Central Advisory Board now deals with closer settlement for the whole State.

The following table contains information regarding areas administered under the Closer Settlement Acts as at 30th June, 1921 :—

Land Board District.	Land contained in Settlement Purchase Areas.			Price paid for Acquired Land.	
	Acquired Land.	Additional Crown Land.	Total.	Total.	Per Acre.
Estates acquired under Closer Settlement Act—	acres.	acres.	acres.	£	£ s. d.
Armidale ... ..	53,929	19,271	73,200	138,866	2 11 6
Dubbo ... ..	6,477	6,049	12,526	19,426	3 0 0
Forbes ... ..	140,832	55,079	195,911	355,121	2 10 5
Goulburn ... ..	54,431	2,047	56,478	207,604	3 18 3
Grafton ... ..	Nil.	Nil.	Nil.	Nil.	Nil.
Hay ... ..	"	"	"	"	"
Kempsey ... ..	"	"	"	"	"
Maitland ... ..	1,526	25	1,551	7,631	5 0 0
Metropolitan ... ..	Nil.	Nil.	Nil.	Nil.	Nil.
Moree ... ..	12,357	528	12,885	49,022	3 19 8
Orange ... ..	42,855	902	43,757	186,119	4 6 10
Tamworth ... ..	157,071	462	157,533	660,143	4 4 1
Wagga Wagga ... ..	276,314	10,519	286,833	1,091,602	3 19 0
Total ... ..	745,792	94,882	840,674	2,715,534	3 12 10
Estates acquired under the Promotion provisions of the Closer Settlement Acts—					
Armidale ... ..	33,422	...	33,422	130,161	3 17 10
Dubbo ... ..	65,980	...	65,980	239,687	3 12 8
Forbes ... ..	185,977	...	185,977	794,096	4 5 5
Goulburn ... ..	39,208	...	39,208	141,997	3 12 5
Grafton ... ..	35,315	...	35,315	404,778	11 9 3
Hay ... ..	38,621	...	38,621	130,969	3 7 10
Kempsey ... ..	16,560	...	16,560	146,825	8 17 4
Maitland ... ..	19,344	...	19,344	169,539	8 10 10
Metropolitan ... ..	9,190	...	9,190	151,329	16 9 4
Moree ... ..	23,498	...	23,498	80,979	3 8 11
Orange ... ..	51,845	...	51,845	208,453	4 0 5
Tamworth ... ..	106,110	...	106,110	384,224	3 12 5
Wagga Wagga ... ..	103,813	...	103,813	569,435	5 9 8
Total ... ..	729,383	...	729,383	3,552,472	4 17 5
Estates acquired under Closer Settlement Promotion Act of 1910—					
Armidale ... ..	13,462	...	13,462	72,818	5 8 2
Dubbo ... ..	20,495	...	20,495	105,358	5 2 10
Forbes ... ..	158,476	...	158,476	711,305	4 9 9
Goulburn ... ..	13,041	...	13,041	46,917	3 12 0
Grafton ... ..	24,856	...	24,856	225,972	9 1 10
Hay ... ..	46,852	...	46,852	197,336	4 4 3
Kempsey ... ..	Nil.	...	Nil.	Nil.	Nil.
Maitland ... ..	2,970	...	2,970	19,747	6 13 0
Metropolitan ... ..	7,358	...	7,358	76,132	10 7 0
Moree ... ..	Nil.	...	Nil.	Nil.	Nil.
Orange ... ..	10,047	...	10,047	43,647	4 6 10
Tamworth ... ..	9,375	...	9,375	37,847	4 0 9
Wagga Wagga ... ..	164,172	...	164,172	902,151	5 9 11
Total ... ..	471,104	...	471,104	2,439,230	5 3 7
Total ... ..	1,946,279	94,882	2,041,161	8,707,236	4 9 6

NOTE.—In addition to the above, 24 estates of an area of 300,609 acres, valued at £1,430,115 have been acquired and finally dealt with for Soldiers' Settlements, and two other estates have been acquired, but purchase has not been finalised.

Of the total area of Closer Settlement lands, 26,781 acres have been reserved for roads and other purposes, and 813,893 acres have been divided into 1,681 farms, the average area per farm being 484 acres.

Particulars of the subdivisions are shown in the following statement :—

Land Board District.	Farms.	Capital Value of Areas contained in Farms.			Farms allotted to 30th June, 1921.	Area allotted.	Capital value of Farms allotted.
		Acquired Lands.	Crown Lands.	Total.			
<b>Estates acquired under Closer Settlement Act—</b>	<b>No.</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>No.</b>	<b>acres.</b>	<b>£</b>
Armidale .. .. .	134	138,716	27,231	165,947	134	67,820	165,947
Dubbo .. .. .	18	19,886	11,571	31,457	18	12,306	31,457
Forbes .. .. .	171	387,095	96,157	483,252	149	167,847	421,070
Goulburn .. .. .	154	220,321	9,274	229,595	154	55,387	229,595
Grafton .. .. .	Nil.	..	..	..	..	..	..
Hay .. .. .	..	..	..	..	..	..	..
Kempsey .. .. .	..	..	..	..	..	..	..
Maitland .. .. .	3	8,271	244	8,515	2	1,139	5,833
Metropolitan .. .. .	Nil.	..	..	..	..	..	..
Moree .. .. .	76	51,721	868	52,589	76	12,733	52,589
Orange .. .. .	119	195,444	2,551	197,995	119	43,019	197,995
Tamworth .. .. .	410	712,057	1,497	713,554	410	154,361	712,554
Wagga Wagga .. .. .	596	1,154,507	26,771	1,181,278	594	280,126	1,177,076
<b>Total .. .. .</b>	<b>1,681*</b>	<b>2,888,018</b>	<b>176,164</b>	<b>3,064,182</b>	<b>1,656</b>	<b>794,738</b>	<b>2,995,115</b>
<b>Estates acquired under the Promotion Provisions of the Closer Settlement Acts—</b>							
Armidale .. .. .	65	130,161	..	130,161	65	33,422	130,161
Dubbo .. .. .	90	239,687	..	239,687	90	65,930	239,687
Forbes .. .. .	310	794,096	..	794,096	310	185,977	794,096
Goulburn .. .. .	70	141,997	..	141,997	70	39,298	141,997
Grafton .. .. .	214	404,778	..	404,778	214	35,315	404,778
Hay .. .. .	58	130,969	..	130,969	58	38,621	130,969
Kempsey .. .. .	77	146,825	..	146,825	77	16,560	146,825
Maitland .. .. .	113	169,539	..	169,539	113	19,544	169,539
Metropolitan .. .. .	145	151,329	..	151,329	145	9,190	151,329
Moree .. .. .	31	80,979	..	80,979	31	23,498	80,979
Orange .. .. .	102	208,453	..	208,453	102	51,845	208,453
Tamworth .. .. .	162	384,224	..	384,224	162	106,110	384,224
Wagga Wagga .. .. .	232	569,435	..	569,435	232	103,813	569,435
<b>Total .. .. .</b>	<b>1,669</b>	<b>3,552,472</b>	<b>..</b>	<b>3,552,472</b>	<b>1,669†</b>	<b>729,383</b>	<b>3,552,472</b>
<b>Estates acquired under Closer Settlement Promotion Act, 1910—</b>							
Armidale .. .. .	47	72,818	..	72,818	47	13,462	72,818
Dubbo .. .. .	45	105,358	..	105,358	45	20,495	105,358
Forbes .. .. .	307	711,305	..	711,305	307	158,476	711,305
Goulburn .. .. .	29	46,917	..	46,917	29	13,041	46,917
Grafton .. .. .	141	225,972	..	225,972	141	24,856	225,972
Hay .. .. .	88	197,336	..	197,336	88	46,852	197,336
Kempsey .. .. .	Nil.	..	..	..	..	..	..
Maitland .. .. .	12	19,747	..	19,747	12	2,970	19,747
Metropolitan .. .. .	38	76,132	..	76,132	38	7,358	76,132
Moree .. .. .	Nil.	..	..	..	..	..	..
Orange .. .. .	23	43,647	..	43,647	23	10,047	43,647
Tamworth .. .. .	18	37,847	..	37,847	18	9,375	37,847
Wagga Wagga .. .. .	401	902,151	..	902,151	401	164,172	902,151
<b>Total .. .. .</b>	<b>1,149</b>	<b>2,439,230</b>	<b>..</b>	<b>2,439,230</b>	<b>1,149‡</b>	<b>471,104</b>	<b>2,439,230</b>
<b>Total .. .. .</b>	<b>4,499</b>	<b>8,879,720</b>	<b>176,164</b>	<b>9,055,884</b>	<b>4,474</b>	<b>1,095,225</b>	<b>8,986,817</b>

\* Includes 22 farms of 17,857 acres (Forest Vale Estate), being utilised in connection with Government scheme of share-farming.

† Includes 1 farm which was subsequently forfeited and was vacant at 30th June, 1921.

‡ Includes 4 farms which were subsequently forfeited and were vacant at 30th June 1921.

Up to 30th June, 1921, the total farms allotted were 1,656, containing 794,738 acres, of the capital value of £2,995,115, representing an average cost to the settler of £3 15s. 5d. per acre and of £1,809 per farm.

Of the above number, 45 farms, with 24,714 acres and valued at £107,716, have been converted into homestead farms, leaving 1,611 farms allotted under the Closer Settlement Act in existence at 30th June, 1921, the area of which is 770,024 acres and the capital value £2,887,399.

On the 30th June, 1921, there were 25 farms containing 19,155 acres unallotted; 22 of these of 17,857 acres are being utilised in connection with the Government scheme of share-farming, leaving 3 farms of 1,298 acres available for settlement.

The farms which have not yet been selected are let under permissive occupancy, and remain available for settlement purchase application.

The balances of purchase money under the Closer Settlement Acts, as at 30th June, 1921, including deferred and postponed instalments and adjusting interest, amounted to £9,575,394. Arrears of instalments at the same date were £368,727.

#### *Closer Settlement Promotion.*

The provisions of the Closer Settlement Acts, which replace the Closer Settlement Promotion Act, 1910 (repealed), enable three or more persons, or one or more discharged soldiers, each of whom is qualified to hold a settlement purchase, to negotiate with an owner of private lands, and under certain conditions to enter into agreements with him to purchase a specified area on a freehold basis, for a price to be set out in each agreement. Any one or more discharged soldiers or sailors may also enter into agreements to purchase on a present title basis from the holder—a conditional purchase; a conditional purchase lease; a conditional purchase and conditional lease, including an inconvertible conditional lease; a homestead selection; a homestead farm; a settlement lease; a Crown lease, or any part of one or more of such holdings; or an improvement or scrub lease, not substantially more than sufficient for the maintenance of a home.

Upon approval by the Minister, the vendor, in the case of private land, surrenders the area to the Crown, and the purchaser acquires it as a settlement purchase. In the case of land acquired on present title basis, the vendor transfers it to the purchaser. The vendor is paid by the Crown, either in cash or in Closer Settlement Debentures, and the freehold value of the land, inclusive of improvements thereon, purchased for any one person must not exceed £3,000, except in special cases where the improvements warrant it, when the freehold value may be up to £3,500; if the land is found suitable for grazing only, the freehold value may be up to £4,000.

Each farm is worked independently, the co-operation of the applicants ceasing with the allotment of an area. Each applicant has to pay a deposit of  $6\frac{1}{2}$  per cent. of the Crown valuation of the farm granted to him, except discharged soldiers or sailors, who are not required to pay any deposit. Repayments of the balance of the purchase money to the Crown are subject to the regulations in force at the date of commencement of title. At present the regulations provide for repayment at the rate of  $6\frac{1}{2}$  per cent. per annum of the capital value of the farm, where the purchase money is paid in cash; this includes interest at the rate of  $5\frac{1}{2}$  per cent. on the outstanding balance, the whole indebtedness being discharged in thirty-two years, where the initial deposit is paid. If the land is paid for by debentures, the deposit and annual instalments to be paid by applicants are  $1\frac{1}{2}$  per cent. in advance of the rate of interest paid by the Crown in connection with the debentures, and the interest to be paid on the unpaid balance of purchase money is  $\frac{1}{2}$  per cent. in advance of the rate of interest paid by the Crown as aforesaid.

Postponement of instalments and payment of interest only for a period may be sanctioned in special circumstances, and holders of farms may obtain advances from the Government Savings Bank Commissioners on account of improvements effected.

From the commencement of the Closer Settlement Promotion Act in September, 1910, till 30th June, 1921, promotion proposals were received in respect of 7,259 farms of a total area of 3,714,769 acres, the amount

involved being £16,745,637, and many of these proposals were either withdrawn or refused. The total number of promotion proposals under the Closer Settlement Acts allotted and finally dealt with, for which payment had been made by the Government Savings Bank, and from the Closer Settlement Fund as at 30th June, 1921, were 2,818 farms representing 1,200,487 acres, valued at £5,991,702; of this number 1,149 farms embracing an area of 471,104 acres at a cost of £2,439,230, were paid for by the Government Savings Bank, and payment was made from the Closer Settlement Fund in respect of 1,669 farms of an area of 729,383 acres, value £3,552,472. Included in the foregoing are 5 farms which were subsequently forfeited and were vacant at 30th June, 1921.

A detailed statement of these transactions in Land Board Districts will be found under the head of Closer Settlement. (See pages 867 and 868.)

The following table shows the operations under the Promotion Section of the Closer Settlement Acts during the eleven years ended 30th June, 1921:—

Year ended 30th June.	Farms Allotted.		
	Number.	Area.	Amount Advanced.
		Acres.	£
1911	26	10,785	54,131
1912	209	84,279	418,941
1913	274	107,791	599,145
1914	183	62,598	361,351
1915	95	35,963	201,163
1916	157	68,219	331,037
1917	57	28,877	123,330
1918	154	71,942	351,011
1919	153	57,934	293,780
1920	572	209,857	1,121,339
1921	938	462,242	2,136,474
Total...	2,818	1,200,487	5,991,702

In addition to the land acquired by the State for closer settlement a number of estates have been subdivided for that purpose by private owners.

## INDEX.

- Abattoirs, Homebush, 514, 788  
 Aborigines, 122  
     Protection of, 477  
 Absentee Ownership, 681  
     Taxpayers, 204, 320  
 Accidents, Deaths from, 157  
     Factory, 586  
     Mine, 453  
     Railway and Tramway, 416, 423  
 Accumulation, 669  
     Rate of, 676  
 Advances, Bank, 291  
     for Homes, 493  
     to Settlers, 723-6  
 Ages of School Children, 179  
 Agricultural Bureau, 721  
     College, Hawkesbury, 722  
     Education, 184, 722, 798  
     Industry, Inquiry into, 726  
     Research, 722  
     Settlement, 56-64, 712  
 Agriculture, 707-757  
 Agriculture—  
     Bananas, 757  
     Barley, 748  
     Department of, 720  
     Employment, 545, 720  
     Ensilage, 750  
     Green Food, 750  
     Hay, 749  
     Holdings, 715  
     Machinery, 717  
     Maize, 745  
     Oats, 747  
     Orchards, 755  
     Potatoes, 751  
     Sugar-cane, 753  
     Tobacco, 753  
     Value of Production, 709  
     Vineyards, 754  
     Wheat, 726-745  
 A.I.F. 48  
 Alcohol, Consumption of, 507  
 Alienation of Lands, 852  
 Aliens, 121  
 Alnnite, 451  
 Amusements, 496-8  
 Animals, Noxious, 794  
 Antimony, 444  
 Apiculture, 810  
 Appeals, Law, 240  
 Appendicitis, 154  
 Apprenticeship, 585  
 Apprentices, State, 472  
 Arbitration, Industrial—  
     Commonwealth, 578  
     State, 568  
 Area of New South Wales, 49, 758, 840  
     Cultivated, 708  
     Occupied for Mining, 432  
     Suitable for Wheat, 727  
 Arrests, 228  
 Arrivals and Departures, 109  
 Artesian Bores, 764  
 Art Gallery, National, 192  
 Assurance, Life, 301  
 Asylums, State, 476  
 Auditor General, 32  
 Australian Imperial Expedition—  
     Forces, 48  
 Australian Notes, 287, 697  
 Awards, Industrial, 575  
 Baby Clinics, 135, 468  
 Bacon, 806  
 Bananas, 757  
 Bank, Commonwealth, 294  
     Holdings, 695-8  
 Banking, 289-297  
     Crisis, 1893, 13  
 Bank Notes, 286, 697  
 Bankruptcy, 236, 312  
 Banks, Advances, 294  
     Assets, 290  
     Capital, 289  
     Exchange Rates, 293  
     Interest Rates, 293  
     Savings, 295  
 Barley, 352, 748  
 Barristers, 242  
 B.A.W.R.A., 781  
 Bee-farming, 810  
 Beer Brewed and Materials Used, 352  
     Consumption of, 507  
 Betting Taxes, 203  
 Bills of Exchange, 293  
 Bills of Sale, 315  
     Treasury, 211, 220  
 Birds of New South Wales, 85  
 Birth-rates—Australasian States, 128  
     Metropolis and Remainder of State, 129  
 Births, 127  
     Notification of, 467  
     Plural, 130  
     Sexes of Children, 129  
 Biscuit Factories, 350  
 Bismuth, 444  
 Blindness, 466  
 Board of Trade, 577  
 Boot and Shoe Factories, 353  
 Bores, Artesian, 764  
 Boring, Shallow, 765  
 Botanic Gardens, 495  
 Boundaries of New South Wales, 49  
 Bounties on Manufactured Products, 450  
 Bread, Consumption, 503-505  
     Prices, 515-529  
 Breweries, 352  
 Brickworks, 343  
 Bridges, 399



- Bright's Disease, 154  
 Broken Hill Mines, 440  
 Bronchitis, 152  
 Bronze Currency, 637  
 Building, Cost of, 530  
 Building Societies, 299  
 Buildings, New, 490  
 Bulk Handling of Grain, 739  
 Burrinjuck Dam, 759  
 Bursaries—  
     State School, 180  
     University, 182  
 Butter, Consumption of, 503-6  
     Factories, 347  
     Production of, 799, 802, 804  
 Cable Services, 428  
 Cadets, Military, 44  
 Cainozoic Period, 77  
 Cancer, 149  
 Candle Factories, 342  
 Capital Cities, Australian, Population, 119  
 Capital Punishment, 247  
 Cattle, 694, 768-787  
     Breeds, 784  
     Dairy, 800  
     Prices of, 786  
     Required for Food, 513  
     Slaughtered, 788  
     Value of, 694  
 Causes of Death, 141  
 Census Enumerations, 105  
 Chambers of Commerce, 264  
 Charitable, Relief, 456, 476  
 Charities (*see* Hospitals), 476  
 Cheese, Consumption of, 503-6  
     Production of, 799, 805  
 Childbirth, Deaths in, 155  
 Child Labour in Factories, 336  
 Children, Ages, 170  
     Defective, 185  
     Delinquent, 474  
     Homes for, 473  
     Mentally Deficient, 473  
     Neglected, 469  
     Of School Age, 170  
     Protection of, 466-476  
     State, 470  
 Children's Courts, 229  
 Child Welfare, 466  
 Chinese Restriction, 11, 121  
 Church Schools, 167  
 Chromite, 444  
 Cigarettes and Cigars, Consumption of, 352  
     Manufacture of, 509  
 Cirrhosis of the Liver, 154  
 Cities of New South Wales, 358  
 Citizen Forces, 44-47  
 City Railway, 407  
 Climate, 68  
 Clinics, Baby, 135, 468  
     University, 176  
 Closer Settlement, 865-70  
 Closer Settlement Account, 195  
 Cloth Factories, 353  
 Clothing, Cost of, 541  
 Coal, 445  
     Consumption of, 448  
     Discovery of, 4  
     Exports of, 448  
     Miners, 448  
     Wages of, 446  
     Mines, Value of, 700  
     State, 448  
     Prices of, 449  
     Production of, 447  
 Coalmining, Intermittency, 558  
 Coastline, 50  
 Cobalt, 444  
 Cobar Mines, 442  
 Coffee, Consumption of, 503-6  
 Coinage, 285, 635-8  
 Coin and Bullion, 695  
 Coke, 449  
 Commerce, Chambers of, 264  
     Exports, 254-261  
     Imports, 254-259  
 Commercial Commissioners, 264  
     Education, 183  
 Commissions and Trusts (Public), 32  
 Common Law, 233  
 Commons, 495  
 Commonwealth Bank, 294  
     Establishment of, 14, 38  
     Government Line of Steamers, 276  
     Railways, 406  
     Repayments to States, 223-225  
 Communicable Diseases, 461  
 Companies, Incorporated, 297  
     Banking, 289  
     Capital, 681-2  
     General Insurance, 308, 310  
     Life Assurance, 301  
     Mining, 700  
 Compensation Paid, Railways, 418  
     Seamen's 588  
     Tramways, 423  
     Workmen's, 587  
 Compulsory Training, 44  
 Concerts, 497  
 Conciliation, Industrial, 576, 578  
 Conjugal Condition, 126  
 Conscription, 19, 20  
 Conservatorium of Music, 189  
 Consolidated Revenue Account, 193  
 Constitution, Federal, 38  
     State, 26  
 Consumption of Food, 503  
 Continuation Schools, 164  
 Convulsions of Children, 150  
 Cook, Captain James, 1  
 Co-operative Societies, 298  
 Copper, 441  
 Copyright, 242  
 Coroner's Courts, 230  
 Cost of Living, 538, 543, 678, 644, 659  
 Courts of Law—  
     Appeals, 240  
     Children's, 229, 475  
     Coroners', 230  
     Criminal, 238  
     Appeal, 241

Courts of Law—*continued.*

- District, 232
- Fair Rents, 231, 531
- Full Court, 240
- High Court of Australia, 239, 241
- Industrial Arbitration, 233
- Licensing, 231, 499
- Magistrates 227
- Marine Inquiry, 233
- Petty Sessions, 227
- Profiteering Prevention, 232
- Quarter Sessions, 235, 240
- Small Debts, 230
- Supreme, 233-236, 240
- Cows, Dairy, Yield 801
- Credit Foncier, 723
- Criminal Courts, 238, 241
- Crops, 708-710, 745-757
  - Wheat, 729, 735
- Crown Land—Holdings, 839
- Crustacea, 90
- Cultivation, Area under, 708
  - Area under Various Crops, 714
- Curlwaa Irrigation Area, 761
- Currency, 286, 695-8
- Customs Acts, 253
  - Revenue, 263
- Dacey Garden Suburb, 493
- Dairying, 797-812
  - Cattle, 800
  - Employment, 545
  - Instruction, 798
  - Production, 799, 811
  - Value of, 811
- Dancing, 497
- Dend Letters, 426
- Deaf Mutism, 466
- Deaths, 132-157
  - Accident, 157
  - Appendicitis, 154
  - Bright's Disease, 154
  - Bronchitis, 152
  - Cancer, 149
  - Causes of, 141
  - Children under one year, 133
  - Children under five years, 138
  - Cirrhosis of the Liver, 154
  - Convulsions of Children, 150
  - Diabetes, 149
  - Diarrhœa and Enteritis, 153
  - Diphtheria and Croup, 145
  - Diseases of the Digestive System, 153
  - Diseases of the Heart, 151
  - Hæmorrhage of the Brain, 150
  - In Childbirth, 155
  - Index of Mortality, 132
  - Infantile Mortality, Causes of, 139
  - Influenza, 146
  - Insanity, 151
  - Measles, 144
  - Meningitis, 150
  - Pneumonia, 152
  - Scarlet Fever, 144
  - Smallpox, 143
  - Suicide, 156

Deaths—*continued.*

- Tuberculous Diseases, 146
- Typhoid Fever, 142
- Violence, 156
- Whooping Cough, 145
- Debt, Public, 214-221
  - External, 215, 681-2
  - Wealth and, 677-9
- Defence, 44
- Dentists, 457
- Diabetes, 149
- Diamonds, 450
- Diarrhœa and Enteritis, 153
- Digestive System, Diseases of, 153
- Diphtheria and Croup, 145
- Discount, Bank, 233
- Diseases, Deaths from Various, 142-157
  - Seasonal Prevalence of, 157
- Distances of Ports from Sydney, 280
- District Courts, 232
- Divorce, 236-238
- Docks and Slips, 275
- Doctors, 457, 459, 464
- Domestic Training Schools, 182
- Drainage Trusts, 387-763
- Dredging for Minerals, 437
- Drink Bill, 508
- Drought Relief, 725
- Drunkenness, 249
- Early Closing, Hotels, 429
  - Shops, 582
- Economic Condition, 55
- Education, 159-192
  - Education, Agricultural, 184
    - Expenditure by State, 160
  - Educational Societies, 189
- Effective Wage, 607
- Eggs, Consumption of, 505
- Elections, Federal, 40, 41
  - State, 32
- Electoralates, Distribution of, 34
- Electric Light and Power Works, 355
- Electric Lighting, Municipal, 371, 389
  - Sydney, 371
  - Elevators, Grain, 739
- Emigration, 109
- Employees, Farm, 720
- Employment, 545
  - Child, 473
- Ensilage, 750
- Entertainment's Bill, 497
  - Tax, 205, 497
- Equity Jurisdiction, 235
- Estate Duties, Commonwealth, 205
- Estates of Deceased Persons, 316
- Examinations, School Children—
  - Intermediate, 177
  - Leaving, 177
  - Qualifying, 177
  - Technical, 179
- Exchange Rates, Bank, 293
- Excise Revenue, 263
- Executive, Federal, 39
  - State, 27
- Expeditionary Forces, Australian, 48
- Expenditure, Local Government, 371, 376, 382

Expenditure—*continued.*

- Rate, 193, 197, 224
- Agriculture, 720
- Business Undertakings, 206-209
- Education, 160, 161
- Hospitals and Charities, 457
- Justice, 252
- Loan, 211-213
- Mining, 433
- State Children Relief, 471
- Experiment Farms, 722
- Exports, 254-261
  - Australian Produce, 260
  - Dairy Produce, 808
  - Meat, 789
  - Pastoral Products, 792
  - Raw Materials, 261
- Extradition, 251
- Factories (*see* Manufactories), 321-356
  - Inspection, 385
- Fair Rents Court, 231, 531
- Fares, Ferry, 542
  - Railway, 542
- Farmers, Share, 719
- Farms, Number and Kind, 831-838.
  - Wheat, 731
- Farmyard Production, Value of, 811
- Farrer Scholarships, 723
- Fauna of New South Wales, 79
- Federal Capital Site, 18, 43
- Federal Territory in N.S.W., 49, 840
- Federation, 12, 14
- Feeble-minded Persons, 473
- Fellmongering, 341
- Ferries, 399
- Fertilisers, 718
- Finance, 193-226, 285-320
  - Federal War Expenditure, 226
  - Local Government, 370, 375, 383
  - Private, 285-320
  - Public, 193-226
    - Relations between State and Commonwealth, 221
    - Taxation, Federal, 204
    - State, 199
  - Rural, 723-6
  - State, Loans, 211
    - Public Debts, 214, 226, 677
    - Surplus Revenue, 222
    - Trust Funds, 209
    - Wealth and Debt, 677
    - and Taxation, 680
- Fire Commissioners, Board of, 309, 390
- Fire Insurance, 308-310
- First Offenders, 227, 248
  - Settlement, 1
- Fisheries, 819
  - Value of Production, 821
- Fishes of New South Wales, 84
- Fish Supply, 515
- Flora of New South Wales, 92
- Flour, Consumption, of, 503-5
- Mills, 350
- Flour, per bushel of Wheat, 734
- Food and Prices, 503-544
- Food Bill, Weekly, 540
- Food Consumption, 503-5
- Foods, Standardisation of, 510
- Forestry, 813-8
- Forests, Destruction of, 104
- Freights, Ocean, 279
- Friendly Societies, 299, 483-489
- Fruit-growing, 757
- Fruit Supply, 518
- Fuel, Cost of, 542
- Fugitive Offenders, 251
- Full Court, 240
- Geological Formation, 75
- Gold, 437
  - Currency, 695
- Government, Constitutional, 25-43
  - Cost of, 206
  - Early forms of, 25
  - Employees, 547
    - Arbitration, 578
  - Factories and Workshops, 323
  - Housing Schemes, 491
  - Local, 357
  - Property, 671-3
- Governor, State, Functions of, 28
- Grafton Water Board, 399
- Grammar School, Sydney, 166
- Grape Vines, 755
- Grasses, Sown, 708, 750
- Green Food, 750
- Groceries, prices (*see also* Food), 528
- Habitual Criminals, 249
- Hæmorrhage of the Brain, 150
- Halls, Public, 498
- Harbours of New South Wales, 283
  - Value of Improvements, 672
- Harbour Trust, Sydney, 280
- Hat and Cap Factories, 354
- Hawkesbury Agricultural College, 185, 722
- Hay, 749
- Hay Irrigation Area, 761
- Health, Public, 455
- Heart, Diseases of, 151
- Herd Testing, 799
- High Court of Australia, 239, 241
- Historical Sketch of New South Wales, 1
- History of New South Wales, Industrial—
  - 1901-1909, 624
  - 1910-1914, 639
  - 1915-1920, 649
  - 1921, 666
- Holdings, Land—Agricultural, 715
  - Rural, 824-839
  - Sheep, 774
  - Size of, 828-830
  - Suburban, 848
- Homes, Advances, for, 493
- Honey, 810
- Horses, 785, 793
  - Value of, 694
- Hospital Saturday Fund, 477
- Hospitals, Convalescent, 461
  - Mental, 463
  - Patients in, 459
  - Private, 458

Hospitals—*continued*.

- Public, 458
  - Expenditure, 460
  - Revenue, 460
  - State Expenditure on, 457, 460
- Hotels, 499
- Hours of Work, 582
- House, Cost of Building, 530
  - Rents, 529
- Households, average size, 490
- Household Effects, Value of, 703
- Houses, Number of, 490
- Houses, etc., Value of, 693
- Housing, 20, 489
- Hunter District Water Supply, 394
- Illegitimacy, 130
- Illegitimate Children, Deaths of, 138, 141
- Immigration, Assisted, 110
  - Coloured, Restriction of, 121
- Imperial Wool Purchase Scheme, 780
- Imports, 254-259
- Imprisonment, 245
- Incomes, Private, 318
- Income Tax—
  - Federal, 204
  - State, 201
- Index of Mortality, 132
- Index Numbers—
  - Production Prices, 615
    - Value of, 618
    - Volume of, 613
  - Retail Prices, 533, 537
  - Wholesale Prices, 519
  - Wealth, 686
- Industrial Arbitration Act, 1901, 15
- Industrial Arbitration—
  - Awards and Agreements, 575, 577
  - Commonwealth System, 578
  - Conciliation, 576, 578
  - Crown Employees, 578
  - State and Federal, 581
  - State System, 568
- Industrial Diseases, 586
  - Dislocations, 561
  - Loss of Wages, 564.
- Industrial History of New South Wales—
  - 1901-1909, 624
  - 1910-1914, 639
  - 1915-1920, 649
  - 1921, 666
- Industrial Undertakings, Govern-  
ment, 207, 323, 343
  - Unions, 554, 568, 574
- Inebriates, 250
  - State Institutions for, 251
- Infantile Mortality, 133-139
  - Causes of, 139
- Infants, Protection of, 466-476
- Infirm, Asylums for the, 475
- Inflation, 686
- Influenza Epidemic, 1919, 146
- Inquests, 230
- Insanity (*see also* Lunacy and  
Mental Hospitals), 151
- Insects and Arachnida, 88
- Insurance, 308
- Interest, Bank Rates, 293
  - on Public Debt, 216, 680
- Intoxicants, Consumption of, 507
- Invalid Pensions, 481
- Iron, 443
- Iron, Pig, Production of, 345
- Iron and Steel Works, 345
- Irrigation, 758-66
  - Areas—
    - Curlwaa, 761
    - Hay, 761
    - Murrumbidgee, 759
    - Progress of, 762
- Jury System Instituted, 6
- Justice, Cost of Administration, 252
  - Law Courts, 227
  - Police, 243
  - Prisons, 245
- Juvenile Offenders, 474
- Juveniles, Employment of, 336
- Kerosene Shale, 435, 446
- Kindergarten Schools, 161
- Labour (*See also* Employment).  
Agencies, 550.
  - Agricultural and Pastoral, 720
- Lakes, 55
- Land, Acquisition, 841
  - Alienation, 841, 852-4
  - Available for Settlement, 824, 862
  - Beyond State Control, 854
  - Boards and Courts, 840
  - Closer Settlement, 865-870
  - Divisions, 840
  - Exchange of, 845
  - Leases, 855, 861
  - Occupied, 824-826
  - Reserves, 863
  - Resumptions, 864
  - Revenue, 205
  - Sales, 841, 852-4
  - Selection, 846, 853
  - Settlement, 823-870
  - Tax, Federal, 204
  - State, 201
  - Tenures, 826, 841-860
    - Conversion of, 854
  - Unalienated, 824, 862
  - Valuations, 360, 689-93
  - Value of Farming, 716
    - Private, 693
    - Public, 692
  - Western Division, 838, 860
- Lard, Production of, 807
- Law Courts, 227-252
- Lead, 438
- Leases, Land, 855-861
- Legal Aid, Poor Persons, 239
- Legislative Assembly, 30
  - Council, 7, 8, 30
- Legitimation Act, 130
- Leprosy, 462
- Letters, 425
- Letter Telegrams, 428
- Liabilities of State, 218, 677-9
- Libraries—
  - Mitchell, 191

Libraries—*continued*.

- Public, 190
- Sydney Municipal, 191
- Licenses, Fishing, 819
  - Forestry, 817
  - Liquor, 489-501
  - Traffic, 244
- Licensing Court, 499
- Life Assurance, 301
- Lighthouses, 274
- Liquor—
  - Consumption, 507
  - Drink Bill, 508
  - Licenses, 489-501
  - Traffic, 499
- Lithgow Iron and Steel Works, 345
- Live Stock—
  - Cattle, 784
    - Dairy, 800
  - Horses, 785
  - Sheep, 771-7
  - Swine, 805
  - Value of, 693
- Living, Cost of, 538, 543
- Living Wage, 588
- Loans, Cost of Raising, 219
  - Local Government, 372, 381, 384
  - State, 211, 219
  - Expenditure from, 211, 213
- Local Government, 357-402
  - City of Sydney, 369
  - Historical Survey, 357
  - Housing Schemes, 494
  - Municipalities, 375
  - Property, 673
  - Shires, 382
  - Taxation, 365
  - Valuations, 360, 689-93
- Local Option, 500
- Lock Hospitals, 247
- Lord Howe Island, 50
- Lunacy, 463
- Machinery, Agricultural, 717
  - Coal-cutting, 448
  - Manufacturing, 325
  - Mining, 436
  - Pastoral, 717
  - Value of, 702
- Mail Services, 426
- Maize, 745
  - Prices, 711
- Mammals, 79
- Manganese, 444
- Manufactories, 321-356
  - Capital Invested, 329
  - Child Labour, 336
  - Classification of, 324
  - Cost of Production, 331
  - Employees, 327, 334, 339, 545
  - General Summary, 321, 328, 333
  - Individual Industries, 340-355
  - Motive Power used, 325
  - Output, 321, 331, 333, 608
  - Output, per employee, 356
  - Wages, 327, 330, 333, 598
  - Women and Juveniles, 338
- Manufactures, Bounties, 450
- Manures, 718
- Marine Inquiry, Court of, 233
- Maritime Strike, 1893, 13
- Markets, Municipal, 373
  - Public, 511
- Marriage, Age at, 127
  - Rate in Australasian States, 125
- Marriages, 124
  - Conjugal Condition of Parties, 126
  - Mark Signatures, 125
  - Minors, 127
  - Religious, 126
- Masculinity, 111, 129
- Maternity Allowances, 469
- Matrimonial Causes Jurisdiction, 236
- Measles, 144
- Meat, Consumption of, 503
  - Exports, 760
  - Imperial Purchases, 790
  - Industry Board, Metropolitan, 514, 788
  - Prices, 529
  - Supply, 513
  - Trade, 787
  - Works, 348
- Medical Inspection of School Children, 186, 475
- Medical Practitioners, 457, 459, 464
- Meningitis, 150
- Merchandise, 638
- Mercury, 444
- Mesozoic Period, 76
- Metal Works, 345
- Metals, Extraction of, 347
- Meteorology, 68
- Migration, 109, 548
- Military Forces, 45
- Milk, 801
  - Consumption of, 503-506
  - Preserved, 803
  - Prices, 517, 529
  - Supervision of Supply, 516
- Mineral Springs, 505
- Miners' Diseases, 452, 586
  - Rights, 431
- Mining Industry, 431-454
  - Employment, 546
  - Industrial Dislocations, 562
  - Leases and Licenses, 431
  - Employees, 434
  - Property, 700
- Ministries, Federal, 41
  - State, 36
- Ministry, Members of, 23
- Minting, 285, 695
- Mitchell Library, 191
- Mollusca, 87
- Molybdenum, 444
- Moneylenders, Registration, 316
- Money orders, 287
- Mortality, Causes, 141
  - Index of, 132
  - Infantile, 133-139
  - In Gaols, 247
  - Rate of, 485
- Mortgages, 314
- Motor Tax, 202
  - Vehicles, 244

- Mountains of New South Wales, 53  
 Municipalities, 357  
   Population, 120, 359  
 Municipal Library, Sydney, 191  
 Markets, 511  
 Murray River Irrigation Scheme, 765  
 Murrumbidgee Irrigation Area, 16,  
   18, 208, 759  
 Museums, 190  
 Music, Conservatorium, 189  
 National Wealth, 670  
 Natural Increase of Population, 131  
 Naturalisation, 123  
 Naval Defence, 47  
 Navigation Act, Commonwealth, 265  
 Navigation of Rivers, 273, 765  
 Newcastle Harbour, 282  
   Iron and Steel Works, 346  
   Sewerage Works, 338  
 New South Wales, Area, 49  
   Historical Sketch, 1  
   Industrial History, 624-668.  
   Wealth, 669-706  
 Nickel, 444  
 Notes, Australian, Bank, 286, 697  
   Postal, 287  
 Nurseries, Forest, 815  
 Nurses, 457, 459, 464  
 Nursing Associations, 477  
 Oatmeal, Consumption, 503  
   Prices, 529  
 Oats, 747  
   Prices, 711  
 Observatory Hill Resumed Area, 493  
 Observatory, Sydney, 73  
 Occupations, 545  
   Factory Workers, 339  
   Licenses for, 502  
   Rural, 720  
 Oil, Kerosene, 446  
 Old-age Pensions, 481  
 Onions, Prices, 529, 711  
 Opal, 451  
 Orchards, 757  
 Orphanages, 472  
 Ostriches, 786  
 Oysters, 819, 821  
 Palaeozoic Period, 75  
 Parcels Post, 425  
 Parks, 402, 495  
 Parliament—  
   Commonwealth, 39  
   First, 9  
   State, 26, 28, 36  
   Cost of, 37  
 Parliamentary Committees, 31  
 Pastoral Industry, 767-796  
   Employment, 545  
   Problems of, 101  
   Value of Production, 793  
   Rise of, 767  
 Pastoral Land Leases, 855  
   Produce Exported, 779, 790, 792  
 Pastures Protection, 794  
 Patents, 242  
 Pensions, 244, 478-483  
 Personal Effects, Value of, 704  
 Pharmacists, 457  
 Physical Features of New South  
   Wales, 50  
 Picture Shows, 497  
 Pigs, 805  
   Prices, 786  
   Slaughtered, 514  
   Value of, 694  
 Pilotage, 273  
 Plants, Important, 92  
 Platinum, 444  
 Pneumonia, 152  
 Police, 243  
   Pensions, 244, 479  
 Political Divisions, 66  
 Population, 106-123  
   Capital Cities of Australia, 110  
   Country Towns, 119  
   Distribution of, 112  
   In each State, 107  
   Sources of Increase, 107  
   Urban and Rural, 113, 359  
 Pork—  
   Consumption, 503, 504  
   Prices, 529  
 Ports, 283  
   Port Jackson, 279  
   Shipping at, 271  
 Postage, Rates of, 426  
 Postal Notes, 287  
   Service, 425, 430  
 Potatoes, 751  
   Consumption of, 503, 505  
   Prices, 505, 529, 711  
 Poultry Farming, 809  
 Preference to Unionists, 584  
 Price Levels—  
   Meat, 505, 520, 523  
   Production, 615  
   Retail, 533, 537  
   Wholesale, 519  
 Prices—  
   Live Stock, 786  
   Metals, 437  
   Retail, 529  
     Bread, 515, 529  
     Fish, 515  
     Food and Groceries, 528  
     Gas, 542  
     Meat, 529  
     Milk, 516, 529  
   Wealth and, 686  
   Wheat, 726-45  
 Wholesale, 519-528  
   Butter, 809, 812  
   Coal, 449  
   Dairy Produce, 812  
   Farm Produce, 812  
   Fruit, 519  
   Meat, 791  
   Milk, 517  
   Pastoral Produce,  
   Potatoes, 711  
   Vegetables, 519  
   Wool, 778  
 Prisoners, 245  
 Prison Labour, Value of, 247  
 Prisons, 245-252

- Private Wealth, 674
- Privy Council, Appeals, 241
- Probate, 235, 316
  - Duties, 202
- Productive Activity, 618
- Production, 608
  - Agricultural, 608, 709
  - Bee-keeping, 810
  - Dairying, 608, 811
  - Farmyard, 608, 811
  - Fisheries, 608, 821
  - Forestry, 608, 816
  - Manufacturing, 321, 331, 333, 608
  - Mining, 434, 608
  - Pastoral, 608, 793
  - Poultry Farming, 811
  - Price Index Numbers, 615
    - Volume of, 616
- Profiteering Prevention, 232
- Prohibition, 501
- Property, Valuation of, 669-706
  - Of Various Countries, 687
  - Owned Abroad, 681
  - Private, 674
  - Taxation of, 360, 365
- Proportional Representation, 33
- Prospecting, 433
- Public Debt, 214, 226, 677
  - Dates of Maturity, 217
  - External, 215, 677, 682
  - Finance, 214
  - Interest on, 217, 680
  - Health, 455
  - Instruction, 159-192
  - Library, 191
  - School System, 159
  - Services, 376, 377, 383, 455
  - Trust Office, 242
  - Wealth, 671-3
  - Works Account, 196
    - Committee, 31
- Puerperal Diseases, 155
- Quarantine, 277
- Quarries, 436
- Rabbits, 794
- Racecourses, 498
  - Admission Tax, 203, 497
- Race Meetings, 497
- Railways, 403-424
  - Accidents, 416
  - Capital Expended, 408, 424
  - City Railway, 407
  - Expenditure, 409
  - Fares, 413
  - Freight Charges, 415
  - Gauges, 420
  - Interest on Capital, 410
  - Other Countries, 419
  - Private, 418, 699
  - Revenue, 409, 411, 424
  - Superannuation Fund, 479
  - Unification, 420
- Railways and Tramways, Value of, 672
- Rainfall, 57, 70, 758
- Rates (*see also* Taxes), 358, 366, 382
- Real Estate, Transactions, 313
- Recreation Reserves, 402, 495
- Re-Exports, 261
- Referenda, Federal, 42
- Reformatories, 474
- Registration of Births, Deaths, Marriages, 124
- Religions of School Children, 171
- Rent, Index Numbers, 534, 537
- Rents, House, 529-33
- Repatriation, 48
- Representative Government, 25
- Representatives, House of, 39, 41
- Reptiles and Batrachians, 81
- Reservoirs, 391
- Returned Soldiers' Settlement,
- Revenue, Customs and Excise, 263
  - Land, 864
  - Local Government, 377, 383
  - Public, 193-224
    - per Head of Population, 195
  - Railways and Tramways, 409-422
- Rivers of New South Wales, 53, 759-66
- River Traffic, 273
- Roads, 399
- Roads and Bridges, Value of, 672-3
- Routes, Length of Sea, 280
- Royal Society for the Welfare of Mothers and Children, 468
- Rural—Bank, 724
  - Industries Board, 725
  - Lands, 716, 823-870
  - Population, 113
  - Settlement, 823
  - Training Schools, 185
- Saleyards, Stock, Homebush, 514
- Savings Banks, 294
  - School, 185
- Sawmills, 344
- Scarlet Fever, 144
- Scholarships, State, 180
- Schools—
  - Industrial, 185, 475
  - Kindergarten, 161
  - Medical Inspection, 186, 475
  - Private, 166
  - State, 159-192
    - Attendance, 169
    - Continuation, 164
    - Correspondence, 163
    - District, 166
    - High, 165
    - In Operation, 159
    - Primary, 162
    - Religions of Scholars, 171
    - Savings Banks, 185
    - Secondary, 164
    - Subsidised, 163
    - Teaching Staff, 168, 186
    - Technical, 172
    - Travelling and House-to-House, 163
- Scientific Societies, 189
- Sea Carriage of Goods, 262
- Sea Routes, Distances, 280

- Seamen, Compensation, 588  
 Discharged and Engaged, 278  
 Wages, 278, 602  
 Seasons, 68  
 Senate, 39, 40  
 Settlement, Density of, 112, 825, 829  
 Spread of, 823  
 Sewerage, 386, 396  
 Sex of Population, 105  
 Share Farming, 719  
 Sheep, 771-777  
 Breeds, 775  
 Losses by Drought, 772  
 Prices, 786  
 Required for Food, 513  
 Sizes of Flocks, 773  
 Slaughtered, 514, 788  
 Stations, Size of, 774  
 Value of, 694  
 Ship-building, 275  
 Commonwealth Government, 276  
 Shipping, 265-284  
 At Ports of the Empire, 272  
 Entered and Cleared, 267  
 Mortgages, 315  
 Nationality of, 267  
 Offices, Government, 278  
 Other States, 268  
 Registers, 276  
 Tonnage, 276  
 Value of, 703  
 Vessels—  
 Imported, 277, 703  
 Sold, 277  
 Ships' Stores Exported, 262  
 Shipwrecks, 273  
 Shires, 364, 368, 382-5.  
 Sickness, 143-157, 459  
 Experience, 485, 488  
 In Gaols, 247  
 Treatment of, 457  
 Silos, Wheat, 739  
 Silver, 438  
 Coinage, 285  
 Currency, 697  
 Prices, 286, 437  
 Sinking Funds, State Debt, 220  
 Slaughtering, 514, 787  
 Small-pox, 143  
 Smelting, 347  
 Soap Factories, 342  
 Social Condition, 455  
 Societies, Building, 299  
 Charitable, 477  
 Co-operative Trading, 298  
 Friendly, 483-489  
 Scientific, 189  
 Solicitors, 242  
 Spirits—  
 Consumption of, 507  
 Drink Bill, 508  
 Stamp Duties, 202  
 Standard Time, 73  
 Starr-Bowkett Societies, 299  
 State Advances—  
 For Homes, 295, 493  
 To Settlers, 295
- State—  
 Children, 470-471  
 Coal Mine, 448  
 Education, 159  
 Employees, 547  
 Finances, 193  
 Forest Nurseries and Plantations, 815  
 Government, 25  
 Housing Schemes, 491  
 Property, 672  
 Railways and Tramway, 403  
 Savings Bank, 295, 493  
 Trawling, 515  
 Workshops and Factories, 323  
 Steel, Production of, 347  
 Stock, Public—Quotations, 220  
 Stock, Live, 693, 771-85.  
 Street-trading (Children), 473  
 Strike of 1917, 21, 660  
 Strikes, 12, 17, 561-68  
 Sugar-cane, 753  
 Sugar—  
 Consumption of, 503-506  
 Mills, 351  
 Prices, 529  
 Refinery, 351  
 Suicide, 156  
 Superannuation Funds, 243, 478  
 Supreme Court, 233-236, 240  
 Surface of New South Wales, 51  
 Sydney, 369-374  
 Harbour, 279-282  
 Harbour Trust, 280  
 Population, 112, 116, 359  
 Tallow, 342  
 Tanneries, 341  
 Tariff Customs, 253  
 Taxation, 199-205  
 Local Government, 365  
 Wealth and, 680  
 Tea, Consumption of, 503-506  
 Prices, 529  
 Teachers, 168, 186  
 Technical Education, 172, 179, 184  
 Telegrams, 427  
 Telegraphs, 427  
 Wireless, 429  
 Telephones, 429  
 Temperatures, 70  
 Territorial Divisions, New South Wales, 840  
 Theatres, 497  
 Tides, 74  
 Timber (*see also* Forestry), 815  
 Tin, 442  
 Prices, 437  
 Tobacco—  
 Consumption of, 509  
 Factories, 352  
 Prices, 543  
 Production, 753  
 Totalisators, 203, 498  
 Trade and Commerce, 253



- Trade—  
 At each Port, 264  
 British and Foreign, 255  
 Oversea, 254-261  
 Trade Marks, 242  
 Trade Unions, 552  
 Subscriptions, 543  
 Traffic—  
 Licenses, 244  
 Regulations, 244  
 Tramways, 420-423  
 Private, 424  
 Transport and Communication, 64  
 Transportation, Abolition of, 8  
 Trawling Industry, State, 822  
 Treasury Bills, 211, 216, 220  
 Trustee, Public, 242  
 Tuberculous Diseases, 462  
 Tungsten, 444  
 Typhoid Fever, 142, 462  
 Unemployment, 557  
 University of Sydney, 173  
 Tutorial Classes, 177  
 Valuations, 360, 669-706  
 Vegetables, Prices and Supply, 518  
 Vehicles—  
 Horse-drawn, 244  
 Motor, 244  
 Venereal Diseases, 247, 463  
 Victoria, Separation from New South  
 Wales, 8, 25  
 Vineyards, 754  
 Violence, Deaths from, 156  
 Vital Statistics, 124-158  
 Voters, 33, 40  
 Wage, Effective, 607  
 Wages, 588  
 Agricultural and Pastoral, 720  
 Coal Miners, 446, 601  
 Loss through Disputes, 564  
 Manufacturing Industry, 327,  
 330, 333, 598  
 Police, 243  
 Rates, 597  
 Seamen, 278, 602  
 War Contingents, 11, 15, 19, 47  
 European, 48  
 Expenditure, 220  
 Legislation, 19  
 Pensions, 480  
 Profits, Taxation, 205  
 Service Homes, 494  
 Water Conservation and Irrigation,  
 758-766  
 Reservoirs, 392  
 Rights, 763  
 Supply, 385, 391-396, 399  
 Wealth, 669-706  
 Distribution of, 318, 683  
 Of Various Countries, 686-8  
 Weather, 68  
 Weeds, Poisonous, 101  
 Weights and Measures, 510  
 Western Division, Lands, 63, 838, 860  
 Wharfage, Sydney, 281  
 Wheat, 726-745  
 Area, Yield, and Export, 739  
 Bulk Handling, 739  
 Consumption of, 732-4  
 Cost of Growing, 736-9  
 Farms, Size of, 731  
 Freights, 740  
 Marketing, 739  
 Pools, 741-3  
 Potentialities, 727  
 Prices, 744  
 World's Production, 735  
 Yield, 728, 730  
 Whooping-cough, 145  
 Widows' Children, Relief of, 472  
 Winds, 68  
 Wine, 755  
 Consumption of, 508  
 Wireless Telegraphy, 429  
 Wives, Deserted, 467  
 Women—  
 Employed, 338, 545  
 Franchise, 16  
 In Prison, 248  
 Status of, 489  
 Wages of, 595  
 Wool, 777-783  
 Wool-growing, Rise of, 5, 767, 777  
 Woollen and Tweed Mills, 353  
 Wool-scouring, 341  
 Workers' Educational Association,  
 189  
 Workers. (*See* Employment), 720  
 Workmen's Compensation, 586  
 Works, Value of Government, 672  
 Wrecks, Ships, 273  
 Zinc, 438  
 Zoological Gardens, 495